

DYSPEPSIA

AND ITS SELF-TREATMENT,

BY

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"Our remedies oft in ourselves do lie
Which we ascribe to Heaven, the fated sky
Gives us free scope, only doth backward pull
Our slow design, when we ourselves are dull."

—Shakspeare.

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PREFACE.

The writer of this book has four pleas for offering it to his readers for perusal :—First his long connection with the medical profession, as a physician among the Bengalees and other dyspeptic races. Secondly, his personal suffering for many years, the thought and labour he devoted to his own cure and that of others, resulting often in marked relief, and sometimes, as in his own case, and that of many others in mastery over the disease. Thirdly, his desire to tell those of his countrymen and women, who are suffering from it, how they too can get rid of the disease, and have a new lease of life. Fourthly, the need of a book on dyspepsia suited to the food and drink, habits and customs of the people of this great country and her neighbours, Burma and Ceylon, which are in conditions similar to her own.

The writer's thanks are due to those savants, Eastern and Western, to whose writings he is indebted for many valuable suggestions and quotations ; to the enterprising proprietor of the Indian Medical Record Mr. A. C. Mukerji Bisharad, for having published some chapters of the book in his journal, and to his printer Mr. M. B. Nath for the trouble he has taken in reading the final proof sheets,

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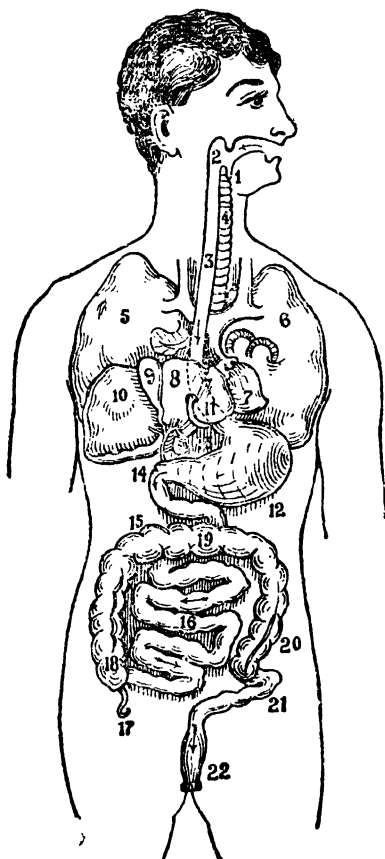
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CONTENTS.

	PAGE,
INTRODUCTION.	
Chapter I. Common causes.	9
„ II. The Digestive organs and their actions.	18
„ III. The various forms of Dyspepsia and their treatment.	39
„ IV. Daily Life in chronic Dyspepsia.	80
„ V. The Fast cure.	106
„ VI. Mental and Nervine treatment.	114
„ VII. Fruit, Nut and 'Pan' cure.	122
„ VIII. Exercise or Labour cure.	130
„ IX. Water cure and Milk cure.	139
„ X. The climatic cure.	150
„ XI. Constipation or Costiveness.	156
„ XII. Tertiary Dyspepsia.	166
„ XIII. The Dyspeptic's Directory.	187
Conclusion.	217

DIAGRAM OF THE DIGESTIVE ORGANS.

(For helping the study of Chapter II).



1. Larynx.
2. Pharynx.
3. Œsophagus.
4. Trachea or wind-pipe.
5. Right Lung.
6. Left Lung.
7. The Heart.
8. Left lobe of liver turned upwards.
9. Gall bladder turned upwards.
10. Right lobe of liver turned up.
11. Upper opening of stomach.
12. Lower or greater curvature of stomach.
13. Upper or smaller curvature of stomach ; behind it lies the pancreas.
14. Pylorus and upper part of duodenum ; arrow shows the course of chyme in this tube.
15. Jejunum covered in front by transverse colon.
16. Ileum. Arrows show the course of chyme.
17. Vermiform appendix.
18. Ascending colon.
19. Transverse colon.
20. Descending colon.
21. Sigmoid flexure.
22. Rectum.

INTRODUCTION,



SELF CURED, OR NEVER CURED :

The physician is often asked by anxious patients "Is old dyspesia curable?" to which he answers "yes, it is, if the patient is determined to cure himself, before it is too late," thus implying that the best doctor is the patient himself. For though the physician can cure the acute, the neurotic, the tertiary and some other conditions, he is unable to restore his patient's health in the ordinary chronic, by far the most common form of the disease, for which medical aid is sought, and that for the following reasons :—

1ST THE PECULIARITIES AND HABITS OF THE PATIENT. The origin and course of the disease, and the temperament or peculiar sensibility of the body, are not only unlike in different individuals, but often opposite in nature. In one, for instance, the disease is due to too poor, in another to a too rich living. In one too much, in another too little labour. In this, as in no other disease, "what is one man's food is another's poison." Acids, tarts and salts are good in atonic, very bad in the irritative form of the disorder.

The food proper in the neurotic variety would kill a patient of the duodenal or intestinal complaint. Habits make differences puzzling to the physician. Some persons can not digest their food, if they do not drink water with it, others can not, if they do. Some patients can not digest milk unless it is boiled thick as syrup, but the great majority can not, unless thin milk is made thinner by mixing with water or soda water. Grilled or roasted meat is a good food for those who can not tolerate vegetables, while with vegetarians meat is disgusting. So with eggs. Going to bed immediately after supper is a potent cause of this disease. Yet some patients insist that unless they go to bed in ten minutes after the night meal, they can neither sleep nor digest their food. Every patient seems to have some peculiarity as his private property, as if to preserve his disease, and prevent its cure.

2ND THE PATIENT HIS OWN ENEMY. Far greater becomes the difficulty for the physician when the patient's passions and propensities make him the slave, for life, of his habits *e.g.* tea, tobacco, alcohol, opium, too much eating; some favourite pursuit or something worse; which all grow up within him like a "second nature;" and make him forget the doctor's admonitions, as soon as the pains of an attack abate, to be remembered again "when in danger, not before." In the radical cure

of a chronic disease like this, the physician and the patient are like the two wheels of a running cart, of which if one breaks down, the cart can not reach its destination. So when the patient fails to co-operate with his medical adviser, or resents at the strictness of his orders, the latter has no other alternative but to retire gracefully from the field by giving the patient an advice of "change of climate."

3RD MEDICINES POWERLESS. But perhaps the most potent reason why the doctor can not cure, is that his medicines can not, and therefore do not obey his orders. All medicines for dyspepsia are only palliative. They can alleviate or lessen our sufferings, but are not curative, can not cure, can not wipe away the disease for good. There is no specific drug for dyspepsia as quinine is for fever, mercury for syphilis or salicylates for rheumatism. Such a remedy does not exist in allopathy, homœopathy, Ayurvedic or Hakimee or any other system.

What is worse ; although drugs serve a temporary purpose, they become positively injurious if taken for a long time. For with each attempt to cure with medicine, there is an increasing debility of the digestive organs reducing their power to profit by drugs, At last the time comes when drugs fail to do any good at all ; after which the more the medicine taking, the less the chance of recovery and, the worse becomes the patient.

Verily, drugs like fire and water, are good servants, but bad masters.

SELF-TREATMENT. Who then can cure this hydra-headed disease, and how? The answer is as the poet says, "therein the patient must minister to himself." Aye, he must either be self-cured or never cured. The self-treatment may be divided into mental and bodily. The former will be discussed here, the latter in the following chapters :—

THE WILL-POWER. The treatment of dyspepsia should commence in the patient's mind. The initial preparation is to have an ardent desire, a strong will power, to be cured. It is the want of this power which makes the disease incurable. The will-power is the vital spark of Heavenly flame in man, which so kindles his purpose and illumines his path as to lead on to victory. It is true that the average individual who has to labour for a livelihood, does not always see his way to mending the causes of this disorder. But a way is not wanting "where there is a will." Dyspepsia is generally due to our being fond of some pursuit or habit, at the expense of our digestive power. Does it not stand to reason that we must kick away those habits and pursuits if we want to get back the digestive power? And how can we do it unless we muster up an invincible resolution? The patient who starts with such resolution may

rest assured that he is already on the high road to cure.

HOW TO STRENGTHEN THE WILL-POWER
1st. By attending to the dictates of our higher self. Man has in him two selves ; a lower which prompts him to do things pleasant now, painful afterwards. This is his enemy, and disease is often due to its instigations, as the sufferer of chronic dyspepsia knows too well. There is also a higher self in him, which expostulates and advises him to do things really good for his body and soul : and calls him back from the evil ways of the lower self. This is his real though disregarded friend "Man is his own friend or enemy" says the Geeta, the Bible of Hindustan, "according as he succeeds or fails to conquer his lower self by his higher one." (VI. 5, 6). Man hears the voice of this neglected friend, in the stillness of the night, when writhing under the adder stings of conscience, after perpetrating a crime, or when tossing in bed, screaming with the horrible pains of colic brought on by his own imprudence, or when like Midas, famishing without food, though he has plenty of gold in the house, but dyspepsia dogs him at his heels and compels him to live on sago gruel. There is no dyspeptic from the king to the street beggar, but sometimes hears this voice, and sees the unerring finger pointing to the cause of the disease. He that obeys this voice, gains a will-power strong enough to mend his

ways and is cured. (*2nd.*) By physical exercise (see chapter VIII.) (*3rd.*) By attentively observing the acts of those who by a strong will power have accomplished great deeds. (*4th.*) By daily prayer to the All powerful to grant will power necessary for a cure.

CONCENTRATION. Closely following the development of will power comes its offspring, concentration of attention to the cause of the disease and the means of relieving it. Concentration is an intoxication of the mind, in which amidst all his daily works the patient's mind points like the needle of the compass to its own particular direction. Concentration has the astonishing power of making the whole world contribute to his success. As he goes about, he hears and sees things which give him information about his disease, its cause and cure; and he wonders why he did not pay attention to them before. Every day he gets more and more information. These should be recorded in a note book, consulted daily, put into practice, and the result written down. The motto on the note book should be "I will cure myself and nothing shall prevent me."

THE REWARD. Thus begins the recovery of the dyspeptic. These two powers soon demolish the old structure of pleasing habits and vices—fame hunting, money hunting, love, jealousy, sorrow, alcoholism, irregular hours, indiscreet eating and

all habits and customs that bring on the disease. All obstacles to cure fly before this invincible resolution as the chaff flies before a strong wind, and the natural curative power of the body, soon leads the patient to recovery. And if the directions given in the following chapters be followed, a sound mind in a sound body will be soon regained. If afterwards the disease sometimes tries to come back, the patient will still have the reward of his labour—a long and happy life, always able to conquer his enemy whenever it approaches him. There are two diseases, asthma and dyspepsia which under good treatment must either yield entirely, or make the patient cautious, abstemious, and long lived.

DYSPEPSIA,
AND ITS
SELF-TREATMENT.
CHAPTER I.
COMMON CAUSES.

Dyspepsia means bad digestion or indigestion. It attacks all human beings regardless of age, sex, rank or nationality, and is the mother of a hundred diseases. People generally pay attention to things visible or nearest to them. But the stomach, though very near us is out of sight, and therefore out of mind. Few of the general public know in what sort of a vessel, the food they swallow falls, and fewer still care to know how it is digested. Hence digestion is the most neglected of our interests, and dyspepsia the most common and obstinate of all diseases. More than half the human race is perpetually suffering from it. Like consumption it is fast spreading its ravages through India, Burma and Ceylon, especially in our cities and towns.

Its Causes are predisposing and exciting :—

1. THE PREDISPOSING CAUSES,—are those which render the individual liable to the disease. First among them are the conditions of civilised

life. Animals only eat and drink when hungry and thirsty, and therefore seldom suffer dyspepsia, so does the savage man. The only clock that strikes the hour of his dinner is his hunger which ensures good digestion. But civilized man, being under conventional rules, has often to eat when not yet hungry or to eat in hurry and anxiety. Dyspepsia is indeed a disease of modern civilization and high pressure life.

2. CLIMATE.—The colder, within certain limits the climate, the keener the appetite and the greater the power of digestion. In Russia people have as a rule excellent digestive powers. In the British isles people can digest an amount of food, which when coming to the tropical climates they cannot. This is one of the reasons why on coming out to India they suffer so much from indigestion especially in the hot season. They forget this difference in digestive power created by climate, and indulge in food and drink proper to their own country. In their frigid climate the Lapland and the Esquimaux digest enormous quantities of the flesh of the reindeer, the seal and the walrus, but in their hot and humid climate, the Assamese, the Bengalee, the Oryah and the Madrassese are repleted with a much smaller quantity of rice and vegetable diet and suffer too often from indigestion, diarrhoea, and dysentery. But the other extreme, namely intense heat, also pro-

duces a digestive power in those accustomed to such heat.

3. AGE—has remarkable influence on digestion. The infant up to the age of 2 or 3 years, can digest a large amount of milk ; and indigestion is only possible if its mother or nurse feed it too much by mistaking the cry of pain for hunger. The real dyspepsia period commences after dentition is complete. From this time up to the age of 10 or 11 years, the child a novice in the art of eating, commits many mistakes and gets many a spell of indigestion. From about the 12th to the 25th or 30th year, growth goes on rapidly and digestion remains remarkably good. After 30, with accumulating cares and anxieties, dyspepsia gets hold of too many men, and in the case of women of the poorer middle class, with their burden of domestic duties, becomes more and more pronounced after every child birth. At last at about the age of 50, the digestive power naturally declines. Henceforth we begin to tread on delicate ground, and he that would digest his food properly, must needs be very cautious, as to quantity and quality. From 60 begins the second period of childhood, in an inverse order of digestive power, so that with each increasing year the less an old man or woman eats the better remains the digestive power, until at last at 80 or 90 the most careful of us has to return this mortal coil to mother earth and the

elements, and becomes free from the necessity of eating. Very few have the fortune or misfortune to reach 100 years.

4. TEMPER.—A cheerful temper is, beyond all doubt, like hunger, the best sauce for good digestion. Hence kings and potentates in many countries formerly allowed and even now allow music to be played, and encourage wit and pleasantry to keep the mind cheerful at meal times. Country people, on account of less anxiety, can digest better than city residents. Again, a healthy man when enjoying a hearty meal, will at once turn away from it and perhaps be sick on receiving the news of a sudden calamity. On the contrary, a person tossing in bed with anxiety and refusing all food, will, if good news be suddenly received, sit up and eat with pleasure. Truly has it been said that the best physicians for this as for many other diseases are "Dr. Diet, Dr. Quiet and Dr. Merryman."

5. HABIT.—The rich man eating dainty food, and spending his time in idleness, is so full of dyspepsia that he has neither the appetite nor the pleasure of eating enjoyed by the day labourer. The libertine who defies all laws of health is punished not only by a bad liver and indigestion but by an early grave or funeral pyre. The upper class Hindu or Musalman lady, spending her time in reading novels and playing cards is troubled

with her afternoon acidity. The sanyasi sitting straight as a rod and stiff as a rock in his meditation, can compel hunger and thirst to fly away from him for several days.

6. OCCUPATION.—The soldier, the mason, the hewer of wood and all who labour outdoors have excellent appetite. But the student, burning his midnight oil is robbed of his appetite. The universities prescribe for him heaps of books, the contents of which he must cram down into his mind. And when they are in, out goes his digestive power. The clerk at the desk, driving his pen shortly after a full meal, knows not that by so doing, he is driving to the brain the blood that should be in the stomach, and thus writes down not only his master's accounts but, as it were, his own, destiny too, a short and dyspeptic life. The judge on the bench, sitting immovably for many hours a day, sifting grains of truth, from cart loads of half truths, so distresses his mind that he suffers dyspepsia or its cousin diabetes. But the magistrate with his active habits generally escapes them. The statesman, the author, the editor, the merchant, all suffer in this way, from sedentary habits and intense thinking. The employes in the offices and factories of our large cities, who live at night in the country and reach their places of business in the morning by railway or tramways, have little time to take their breakfast quietly and none at

all to rest after it. To them "unquiet meals" as the poet says "bring ill digestion", Nay their lot compels them to make digestion impossible. For they run panting to catch the train, and keep shaking and jolting when it runs, as if to prevent the secretion of gastric juice upon the food eaten.

7. **INHERITANCE:**—If during her pregnancy the mother be suffering from severe dyspepsia, the child will probably be a lifelong dyspeptic and have bad liver owing to such mother's milk, sometimes all the brothers and sisters of such a family are affected with the disease. The father's influence is not so manifest. But the disease may come down from maternal grandmother, to mother and her children.

II Exciting 'causes are those which so excite the system as to produce the disease at once. These are:—

1ST. EATING IN A HURRY. The greatest pleasure of eating is felt, not in the chewing but in the swallowing, when the food is gliding down the root of the tongue. Hence those who only care for the pleasure, swallow food without well chewing, and bring on ill-digestion. On the other hand those who are compelled to swallow quickly to save time, also suffer from it.

2ND. EATING IN EXCESS is the most potent cause of indigestion, liver enlargement, gout and

albuminuria. "The platter kills more than the sword" says Osler. Sometimes it is seen, that a man eats much, and yet does not get ill. Such a man is generally found to be not very intelligent. Being a great man in the functions of the stomach he can not be great in those of the brain. But wait, his greater punishments are yet to come. He engorges his stomach, and thereby his liver both of which are, in his case, slow but sure to revenge. But when the hour of reckoning comes, he breaks down under some disorder of the digestive system. The writer has never seen a voracious eater having long life. "Eat little if you would eat much, eat much, if you would eat little" is an Indian proverb, which means that by eating a small quantity at a time, you live long, and therefore in the long run, eat much. But if you eat much at a time you get ill, die soon, and therefore the total quantity you eat in your life is not much. As if nature invites us here on this earth, to have a fixed quantity of food in a life time, which we may eat quickly, and quickly go out of the world, or eat it in small quantities and remain here a long number of years,

3RD EATING AT TOO LITTLE OR TOO LONG INTERVALS.—Eating irregularly, between meals is just as potent a cause of this disease as eating at too long intervals. If a healthy man, leading an active life, allows 10 or 12 hours to pass between

his morning and evening meals, without any food, he is sure to have dyspepsia after a time. Such a long fast is not so bad at night, when the person is in bed, as during the day. Long starvation as in famine stricken persons, robs the victim of digestive power.

4TH DEFICIENCY OF PARTICULAR INGREDIENTS OF FOOD brings on peculiar form of dyspepsia. Thus rickets is a disease of children due to giving them too little milk and too much starchy food. Deficiency of vegetable and vegetable acids leads to scurvy, a form of dyspepsia, and gastritis is too often the result of want of fresh meat, and eating preserved meat.

5TH QUALITY.—Green or dried vegetables, stale and semi-decomposed food and adulterated food cause this disease. The fearful adulteration of food articles in our markets, is responsible for innumerable cases of indigestion and liver complaint, and should be put down by the strong hand of the state.

6TH TOO HOT OR TOO COLD FOOD OR DRINK irritates or paralyzes the thin covering of stomach, the mucous membrane, prevents secretion and thus brings on dyspepsia. The best temperature at which food and drink should be taken is that of our body 98.4 or in the cold season, slightly over. To take steaming milk or tea or iced drinks habitually, is to invite dyspepsia.

7TH DRINKING TOO MUCH LIQUID.—In this hot country the temptation to drink large quantities of water and other liquids in the hot season is irresistible. Unfortunately many people do not know that so innocent a thing as pure water, can produce dyspepsia. But it is apparent that an unduly large quantity must reduce the temperature of the stomach, lessen the secretion of gastric juice, dilute and weaken it, and so bring on dyspepsia.

8TH INTOXICANTS (to be considered later on.)

9TH CERTAIN FOODS.—Crabs, mussels pork, hard boiled eggs, cucumbers, onions, garlic, horse radish, cauli-flower, cabbages and many other articles ferment and produce this disease. "Dyspepsia," said a distinguished physician, "is due to a stomach overloaded with fresh meat and sauces."

10TH CERTAIN DISEASES.—Malaria, anæmia, phthisis, gout rheumatism, Bright's disease, liver and heart disease and all wasting diseases cause it. It is also the forerunner of many serious diseases.

11TH PREGNANCY.—The dyspepsia of pregnancy may be called the "insanity of the tongue and stomach." The pregnant woman hates the daintiest food, but still eats chalk and slate.

CHAPTER II.

THE DIGESTIVE ORGANS, AND THEIR ACTIONS.

1. **THE TEETH**—The mouth is the gate of entrance into the digestive structure, and the teeth are its door keepers. They add beauty to the mouth and face, prevent foreign bodies going in, and saliva dribbling out, and make speaking, perfect. But their principal business is to complete the first part of digestion, that portion which is entirely at our command. As labourers in a well ordered establishment, they have their division of labour. The front ones cut the food, as if by so many sharp knives and the dog-teeth pierce the tougher morsels, and then push the food behind, to be worked up into a soft mass, by the back rows of teeth. They crush, they grind, they rub the food as between so many mill stones and make it soft and liquid with the help of the saliva. How great the power of the teeth is in producing good digestion will be seen if you take a lump of bread in the mouth, chew it thoroughly and then spit it out. You find the bread completely changed in

appearance and digestion fast advancing. Truly there is no happiness in life without health, no health without good digestion, and no good digestion except in infancy, without good teeth. The loss of teeth therefore, in middle life, is a red signal, indicating "Dyspepsia Coming." The person who sees this danger signal should at once have the lost teeth substituted by artificial ones.

THE DENTIST VERSUS THE PHYSICIAN :— Artificial teeth, well set make the individual better looking. conversation a pleasure, and chewing perfect. A dentist does therefore more to prevent an ugly face and indigestion than a physician can do. And as " prevention is better than cure " the dentist is better than the physician in this respect. Again as good chewing ensures the cure of dyspepsia, the dentist is both a curer and preventer of this disease.

DISEASES OF TEETH :— Loose teeth should be extracted and replaced by artificial ones, carious hollow, painful teeth, filled with amalgam or drawn out. For decayed teeth cause toothache and headache ; accumulated tartar should be scraped off ; spongy gums painted with Tinct. Iodine or rubbed with powder no 5, * gum boils lanced. Sometimes the carious root of a tooth continues to discharge pus for many months, compelling the patient to swallow a lot of this poison, which sets

up dyspepsia and poisons the blood. This should be cured at once by powder no. 3.* and Iodine paint.

YOUTH IN OLD AGE:—Whenever you see a man or woman over fifty, enjoying sound, natural teeth, you may rightly conclude that the person has got a charter in the mouth to look well, to eat well, and keep well now and it may be, for many years more. Two friends of the writer, who have long passed the mile stone of three score years and ten, are so blessed. The elder, a young man of 82 (eighty-two) can crack the hardest nut between

* The following are some good tooth powders :—

(1) Wood charcoal finely powdered and sifted, a few drops of spt. camphor added, cleanses teeth and prevents foul breath.

(2) Wood charcoal and chalk equal parts separately powdered, sifted and mixed, in acidity and accumulation of tartar.

(3) Finely powdered cinchona bark one ounce, powdered myrrh one dram, finely powdered chalk, 4 ounces, spirit camphor and carbolic acid each 30 drops—well mixed, for gums discharging pus.

(4) Common salt two parts, mustard oil one part, oil Eucalyptus one part, spt. camphor a few drops—for removing foul smell of mouth.

(5) Acid Tannic one part, Bengal Kino two parts, catechu powder one part. To be used when gums are spongy or bleeding.

his teeth; but the younger who is only a lad of seventy-three, laments that he has lost a few teeth at so tender an age!! Both are strangers to dyspepsia. The first prescription therefore for the self-treatment of this disease is, that the individual who wishes to prevent or cure it, should have *all the teeth*, natural, artificial or mixed in useful condition and clean them every day. Some old persons without teeth have gums strong enough for chewing all ordinary foods.

2. THE TONGUE.—The tongue is the organ of taste and selection of food. To the dyspeptic it is the tyrant of the digestive system—The "Father of Dyspepsia." To please itself it often compels the stomach to take too big a load, which results in the birth of dyspepsia, an ungrateful child who rebels against the tyrant father and compels him to starve.

PERVERTED TASTE.—The sense of taste is much altered in disease. In hysteria, melancholia; neurotic dyspepsia, anorexia, and in extreme weak conditions from any cause, the patient has hardly any power of tasting. The most savoury food tastes insipid. In pregnancy the perversion of taste may be called the tongue's insanity. In jaundice and other bilious conditions and fevers there is often a bitter taste in the mouth. Some dyspeptics complain of a constant sweetish taste,

DIAGNOSTIC APPEARANCES OF THE TONGUE.—

If you wish to treat yourself for dyspepsia, stand before a mirror and look at the tell tale appearances of your own tongue. A healthy tongue is of a pink colour. In nervous dyspepsia the tongue is often clean and gives no indication of disordered stomach. When the tongue is patched like a map it shows gastric irritation. In irritative and other forms of dyspepsia the tongue is covered with a whitish brown coating. If the tongue is coated with a yellowish fur, it shows the liver is out of order. In actual inflammation it wears a red and tapering appearance. When the patient is anæmic and dyspeptic the tongue becomes pale, flabby and has marks of teeth on its edges. In dysentery a red tongue at first and black at last are bad signs, while a lead coloured tongue is a forerunner of death. To remember these signs, the patient, if he likes, may put them like the following lines :—

Tongue tells the tale of human stomach's weal
or woe.

And says whether gut and liver are well or no,
Clean and bright, shows health and might,
and stomach all right.

Patch'd like map and tight, in dyspeptics'
plight,

If covered ov'r with white or brownish down,

It shows nothing but new or old dyspepsa's
frown,

Yellow top and border, show liv'r out of
order,

Tap'ring red, is inflam'd and much in disorder,

If by teeth printed on border, pale and flabby,

The man's dyspeptic, anæmic, nervous, shabby,

Red first, black last, are in dysent'ry very
bad.

If colour be lead, then the man shall soon be
dead.

CLEANING THE TONGUE AND ITS ROOT.—

Every morning the tongue should be scraped with a metallic scraper. The amount of impurities it draws out and the sense of comfort and lightness immediately felt are very marked. In the hollow spaces behind the tonsils, pus-like matter accumulates giving out bad smell, offensive to the patient and those around him. The dyspeptic should put two fingers well behind the tongue, attack the offender, hawk it out, and gargle the mouth.

3. THE SALIVA. The saliva or spittle is the alkaline liquid in our mouth, which keeps it moist and softens the food. Well has it been called by Indian poets the 'Amrita' or nectar of the mouth, for as will be seen in another chapter, it acts like the very drink of the gods in giving us good

digestion. Its remarkable soothing effect on irritated surfaces is known to every one who has instinctively put his singed or slightly burnt finger tip in the mouth and found relief in a few minutes, even if the tip was whitened by the burning. From this it may be safely inferred that a similar action is exerted on the mucous membrane of the stomach when it is irritated by catarrhal conditions in dyspepsia. And so correct is this inference, that the sufferer of acid dyspepsia is found to be instinctively swallowing a large quantity of saliva for the relief of his stomach trouble. It is a merciful arrangement in which a spontaneous self-treatment of dyspepsia goes on, without even the patient knowing that he is treating himself.

CHEMISTRY IN THE MOUTH.—This alkaline liquid, the saliva, poured out in abundance when food is in the mouth, exerts a great chemical change of many of the things we eat. Its active principle, the *Ptyaline* is a ferment which, mixing with the starch of rice, bread and other vegetable foods in the mouth, converts them at first into dextrine or grape sugar, and then into maltose or malt sugar, which in stomach is quickly digested. Its great importance to Indian, Burmese and Ceylonese people whose diet is principally vegetarian is thus at once apparent. In a future chapter will be shown, how, if we use it well

in chewing, we digest our food well, use it little, we get little digestion and much indigestion.

4. THE PHARYNX.—The pharynx is a muscular bag behind the tongue, in which food is collected and immediately swallowed.

5. THE ŒSOPHAGUS.—The œsophagus is a long tube through which the food, when swallowed, falls into the stomach. Various sensations as acidity, burning and heaviness are felt by the dyspeptic in this tube and are called "throat burn" "heart burn," etc. It is more sensitive than the stomach. If you swallow a mouthful of ice cold water on a winter morning, the whole tube receives a painful sensation of cold, which ceases when the water falls in the stomach.

6. THE UPPER GATE OF STOMACH. The lowest part of the œsophagus opens into the stomach, and ends in its upper gate, a self acting opening. This remains open when the stomach is empty. But as soon as food falls in it, it lets the food go down and shuts up immediately, as if afraid lest the food which has come down, should rise up to the mouth. When another part of food comes down, the gate again opens, allows it a passage and shuts up again; so it goes on all the time we eat or drink. When the meal is

finished, it remains shut up all the time digestion goes on. Only if vomiting occurs, the gate suddenly opens; the stomach's contraction throws up all the partially digested food, and the vomit shows the nature of the changes that were going on in the stomach.

7. THE STOMACH. If you stand erect with both arms hanging in close contact with the body, the place which the left elbow touches will be on the curvature of the stomach, and that which the right elbow touches will be on the right lobe of the liver. The stomach is an elastic bag, of the shape of an Indian Bhistee's bag of water. It lies on the left side of the abdomen, with an upper concave and a lower convex surface. It has two openings, an upper as described above, and a lateral on the right side called the pylorus or guard. As the upper opening admits food into the stomach, so the pylorus drives it down into the intestines.

8. THE GASTRIC JUICE. When food falls in the stomach it pours out a slightly acid liquid, from the innumerable pimples on its sides. This liquid is poured out in small quantities, when we are hungry and increases the hunger; more when the food is chewed in the mouth, most when it falls in the stomach. "Its taste" says Dr. Beaumont "resembles that of thin mucilaginous water slightly acidulated with muriatic acid." It is called

"gastric Juice" and is the same as the 'fire of digestion' or "fire of hunger" of ancient Indian writers.

HOW IT RESEMBLES FIRE.—It resembles fire in the following respects: (1) The appetite for food is excited by its secretion with a burning feeling. (2) In dyspepsia, when this fire is going out, you can only re-kindle it by giving it small quantities of food at a time, but a large quantity extinguishes it altogether. Just as you re-kindle an ordinary fire when it is going out, by putting small dry sticks on it; but if you put on a log of wood, the fire goes out entirely. (3) A roaring fire may go out for want of fuel, so does the roaring fire of hunger go out in the starving people you see, in this country in times of famine. (4) A fire goes out for having too much ashes and too little air. Do we not see the same in our rich people whose digestive power is completely extinguished by ashes of rich food and want of work? Hence Dyspepsia is called in Sanskrit "Mandagni," "dull fire" or "Little fire".

ITS DUTIES AND COMPOSITION.—The gastric juice dissolves the food into a semi-liquid poultice like or pudding like substance, and imparts its chemical virtues to the food, particularly to the proteid or albuminous food. As the object of saliva is to digest the starchy part of food like

rice and vegetables, so that of the gastric juice is to digest fish, flesh, eggs, milk and all the albuminous parts of vegetables. For the gastric juice contains, as Dr. Beaumont and others have found, two powerful substances, hydrochloric acid and pepsin, which are capable of digesting albuminous food. Therefore, when gastric juice is poor in quantity, or quality, physicians prescribe these two drugs, to make up the deficiency.

ABNORMAL GASTRIC JUICE.—Although the gastric juice remains normal, when it is secreted in proper quantity, and the proportion of pepsin and acid are $3\frac{1}{4}$ of the former to 1 or $1\frac{1}{2}$ of the latter and 994 $\frac{1}{2}$ to 995 $\frac{1}{2}$ parts of water in every 1000 parts of the juice (1) It becomes too acid as in irritative dyspepsia, for which we suffer acidity (2) At others it is vitiated in quality, for which we get pains in the head and back or (3) is scanty as in atonic dyspepsia, which robs the patient of his appetite or (4) is a mixture of fermentation products, butyric and lactic acid, which produce acidity and foul gas.

9. **THE VAGUS OR PNEUMOGASTRIC NERVE.** This is a thread like nerve coming down from the brain. Its branches pass to the lungs and further down into the stomach. This telegraphic wire establishes such an intimate connection between the brain and the digestive organs, that the conditions of these two distant stations constantly act

and react upon each other. In the next chapter will be described how troubles of the brain produce neurotic dyspepsia and in a future chapter the various brain troubles brought on by disorders of digestion.

10. THE CHYME. Simultaneously with the mixing of gastric juice with food, the stomach begins a swinging movement, from left to right and from right to left alternately; once every two or three minutes. Evidently some infinitely intelligent force, in order to convert the rough animal and vegetable foods, into human body, softens them down to fine liquid, without our help. When a portion of food, thus liquified becomes fine enough to be absorbed in the stomach, it is at once sucked up in the body. What is not fit to be absorbed here is driven out into the duodenum. The substance so prepared is called chyme and its formation, chymification.

11. CHEMISTRY IN THE STOMACH.—And while this mixture, the chyme, is being formed, the starchy food sent down by the mouth as dextrose, becomes converted into maltose, a change making rice and other starches quickly digestible. On the other hand the proteid or albuminous foods like fish, flesh, eggs, and milk, acted upon by the gastric juice become slowly converted into peptones. What is a peptone? It is an albumen, say the white of an egg, or milk, which has

lost its power of coagulating or becoming solid, and remaining thin and watery is quickly absorbed in the circulation.

ITS LIMITATION. But most of these proteids of which milk may be taken as the best example, are not converted in to peptones at once but become half peptones. Milk becomes curdled up in the stomach into casein by the action of gastric juice, as every one has seen in infants vomiting up their milk. And the peptonization goes on in the duodenum, as a slow process. Of late years man has learnt to produce artificial peptonization, *outside the body*, so that this artificially peptonized food when taken by an invalid is quickly absorbed in the stomach. This is an invaluable aid in all diseases, in which there is disordered digestion.

12. THE PYLORUS, OR SENTRY AT THE GATE.—The swinging movement of stomach goes on, and as each portion of food becomes good chyme, a part of it is absorbed in the stomach. But those portions not absorbed here are pushed out of stomach through its right gate, the pylorus. There is a cautious sentinel at this door, a power in the pyloric orifice itself, which only allows a well-formed portion of chyme to go out ; then quickly shuts the door, waiting for another portion to come, which it allows to go out, quickly shuts

again, and so on. If any portion of half-prepared chyme, comes in a hurry to the gate, and tries to pass out, the gate-keeper sends it back, as if saying "Go back, you are not fit to go out yet." Thus it goes on, until at the end of 3 or 4 hours the pylorus relaxes altogether, and lets all the remaining chyme go out.

13. THE DUODENUM OR "12 INCH INTESTINE."—Each portion of the chyme as it goes out of the stomach, glides down into a bent tube about 12 inches long, and therefore called the duodenum. This, the first part of the 26 feet long intestines, is very important to the dyspeptic, for it is the junction station of two feeder lines with the main line of intestines; here two tubes one from the liver, the other from the pancreas bring their secretions, mix them with the chyme, and so hasten digestion. Should either of the two secretions be deficient, duodenal Dyspepsia follows.

14. THE SMALL INTESTINES.—Thus kneaded and mixed up with the bile and the pancreatic juice, in the duodenum, our traveller the chyme much changed in appearance, marches on its downward journey, through the winding labyrinth of small and large intestines, a total length of 25 feet tube, so ingeniously packed and bundled up that we can hardly believe we all are carrying so

big a pipe in our abdomen. The small intestines consist of a large tube divided in 3 parts, the duodenum 1. ft., jejunum and ileum together 20 ft., total 21 ft. It is an extensive field for the digestion and assimilation of chyme. The very soluble parts of chyme at once enter the blood, and pass into the liver, where they are subjected to alterations reducing them to blood. Other parts are acted upon by the secretions of the intestinal glands and are converted into a milk-white substance the chyle,

15. THE CHYLE. THE MILK BEARERS AND OIL BEARERS.—The chyle is the double distilled perfected food, ready for immediate absorption. It is sucked up by the innumerable absorbent vessels, forming a net work in the lining membrane of the small intestines. The vessels or tubes are called lacteals or milk bearers (from lac=milk) as they suck up the milk-like chyle. But the lacteals are oil bearers too. For the fat globules liberated from the oily things we eat are not absorbed directly in the blood, but enter the lacteals in which they become changed before entering the circulation. Both chyle and fat pass through the numerous glands set in the path of the lacteals. The chyle entering these glands undergoes changes reducing it very much to the condition of the

blood. So altered, the whole cargo of chyle passes up through a large tube called the Thoracic Duct.

16. THE THORACIC DUCT.—So called because it runs up the thorax or chest; is the main pipe, through which the many times distilled food is pumped up into the right chamber of the great pumping engine, the heart. From here it passes into the lungs where digestion is completed, pure blood formed and sent to the left side of the heart for distribution to the whole body, for our nourishment, strength and life.

17. THE LARGE INTESTINES.—While chyle is thus absorbed, the thick yellow residue of chyme is pushed on by the contraction of the small intestines into the large intestines, a tube about 5 feet long, and much bigger in caliber than the small intestines. The large intestine coils round the packed up mass of small intestines, to keep such a large tube in safety by preventing it from being loose and slipping out. It is divided into 3 parts; the cœcum, the colon and the rectum. To the cœcum is attached a 5 to 6 inch tube called the vermiform appendix. The colon has an ascending part on the right side, a transverse part on the upper part of the abdomen going from right to left, and on the left side a descending part. Before the descending part finishes its course, it curves

into the figure of an S and is therefore called Sigmoid flexure (from Greek Sigma meaning S) which lies on the left lower side of our abdomen. Here fœcal matter often lodges and refuses to go out giving the dyspeptic great trouble with costiveness. From this place the large intestine takes a straight down ward course in the shape of a tube, and on account of its being straight is called rectum. The rectum has a guard of sphincter muscle at the outer opening called the anus, to prevent fœcal matter from constantly going out.

18. THE FÆCES.—As the thick chyme slowly comes down to these the lowest parts, all nourishing matter which may still remain in the food is sucked up by the vessels and glands of the large intestines. Meanwhile the intestines pour out their refuse matter on this down-coming excrement. So that as it progresses in its downward journey, it becomes more and more bereft of its nutritive element, and more and more full of waste material. At last it arrives at the lowest part of the rectum, and by its pressure on the nerves of the part, produces a desire on the part of the individual to get rid of it, and passes out as stool.

19. THE LIVER, ITS INTIMATE RELATION WITH DIGESTION.—The liver, the largest and most important gland in the human body, is placed on

the right side of the abdomen, so that its right border is behind the spot touched by the right elbow joint when hanging in the standing position. It is intimately connected with the stomach and intestines, and therefore with digestion and indigestion. The blood vessels called veins carry impure blood from the stomach and intestine to the liver, before this blood goes up to the heart and lungs. Now, if we eat too much, or eat such things as the stomach and intestines can not well digest, the impure blood becomes still more impure and finds a difficulty in passing through the liver. The result is a congestion or full blooded condition of liver and stomach; heaviness in the liver and dyspepsia. Again congested stomach and dyspepsia bring on congested liver. On the other hand when the liver itself is congested by means of hard drinking, malaria and other causes, the stomach suffers from dyspepsia.

VARIOUS EMPLOYMENTS OF LIVER.—The liver as an officer of the digestive department has various duties to perform. Its principal duty is to produce and secrete a thick, greenish-yellow, bitter liquid called "bile" which it carefully deposits in a small bag the "gallbladder" and waits for the order of delivery. When the signal is given of "chyme coming down from stomach to duodenum" the liver sends down through its tube the "bile duct" all or most of the bile to the digestive junc-

tion station in the duodenum. Here it meets and mixes with the chyme. What good does bile do? It serves the following functions :—

1ST A SCAVENGER—It is a scavenger to the body. For it brings waste materials from the system by means of the veins and throws them out.

2ND DESTROYER OF ACIDITY—It neutralizes or destroys the acid of the gastric juice in the chyme, when it arrives in the duodenum, where acid is no longer wanted.

3RD A SOAP MAKER—It is a soap maker. For by its combination with the fats and oils of the chyme and also with the alkaline pancreatic juice it produces a soluble soap easily digested, in duodenum and intestines.

4TH. PREVENTS PUTREFACTION—It prevents decomposition of food in the intestines, and saves it from being poisoned by our own food and drink. This is the reason why when the liver secretes very little bile, there is so much wind and foul gas in the intestines.

5TH IS A PURGATIVE—It evacuates, without weakening. When little secreted costiveness is produced.

6TH IS A PORTER OR GATE-KEEPER—Finally, the liver acts as a gate-keeper, a more powerful one than the pylorus. A large number

of poisonous substances in their passage from the stomach and intestines through the liver are arrested in this organ, and made innocent.

20. THE PANCREAS.—The second tubewhich brings to the junction station in the duodenum a liquid, comes from a gland called the Pancreas or "sweet-bread", which lies behind stomach. The Pancreatic juice is a whitish fluid sent down through a tube to the duodenum, where it mixes with the chyme and bile. This juice contains three ferments or digestive substances, and is therefore a very powerful agent in the work of digestion:—(1) One of its ferments, *Amylopsine* like the saliva, converts starch into dextrose and maltose, and thus completely supplements the work of the saliva. (2) The second ferment *Trypsin* like the gastric juice and its pepsin, and like the ferment of the Papaya fruit, turns fish, flesh, eggs and other albuminous foods into peptones, making them easily digestible. (3) The third ferment called *steapsin* saponifies oily matters and produces, like the bile, a soluble soap. Indeed it not only supplements the action of bile as a soap maker, but intensifies its action in that respect. Thus the pancreatic juice combines in itself the actions of saliva, gastric juice and bile, and assists all these three in producing a perfect digestion.

It is a significant fact, that the better the secretion of saliva and gastric juice, the more is

the output of the pancreatic juice. On the contrary if, owing to hasty eating, little saliva is allowed to pour out, and if on account of the individual commencing his labours too soon after a full meal, very little gastric juice secretes, the pancreas following their example, will also refuse to contribute the proper quantity of its secretion. The result is indigestion. This point should be remembered by all dyspeptics.

CHAPTER III.

THE VARIOUS FORMS OF DYSPEPSIA, AND THEIR TREATMENT.

SECTION (I) ACUTE IRRITATIVE DYSPEPSIA.

Acute Irritative Dyspepsia, is called also acute gastritis, acute gastric catarrh or inflammation of stomach.

CAUSES.—Excess of food and drink,—drinking too hot or too cold liquids, bilious attacks, poisonous or irritant or decomposed food, drinking habit, commencement of fevers, cholera and choleraic diarrhœa.

SYMPTOMS.—Severe pain, uneasiness and swelling of abdomen, nausea, vomiting, bilious or acid vomiting, retching after contents of stomach have been voided, slight fever, unquenchable thirst. Indigestion with bile vomiting;—the liver and stomach simultaneously clearing themselves of their load. The liver sends down the bile to the duodenum, which jerks it up into the stomach, which in its turn throws it up through the mouth together with a large quantity of mucus, acid,

water, and the food eaten. When accompanied by purging, the symptoms resemble those of cholera.

TREATMENT.—Nature takes the treatment in hand. She produces spontaneous vomiting and retching to clear out the contents of the stomach, and demands water for thoroughly cleansing out the organ. This demand is expressed by thirst. Let the patient help these benign attempts by taking a tumblerful of tepid water, mixing half a tea-spoonful of common salt or a teaspoonful of powdered mustard with it, or by a copious drink of warm water, followed by tickling the fauces with a feather, or in urgent cases, by introducing two fingers in the throat. This encourages vomiting, removes nausea, thirst, and the feeling of heaviness from the stomach. If bowels be loaded, a dose of castor oil is the best; after the vomiting has stopped. One ounce of the pure oil for an adult, half an ounce for a boy or girl, from 5 to 15 years of age, one-fourth ounce or two drams for an infant two years old. Pour it on a little warm water or milk, or put between two layers of cream or mix with a little peppermint water and drink. If diarrhoea be present no purgative should be taken, but 5 drops of spirit of camphor on a little sugar may be taken every half hour, or 10 to 15 drops of chlorodyne, every hour or two hours until it stops. When the vomiting

is intractable, an ice bag put on the back, over the spine, especially on its middle part, from the 4th to the 8th or 9th dorsal vertebra, is a successful remedy.

WATER THE BEST REMEDY.—The best thing is pure ice water which stops the vomiting and retching, or soda water lemonade or gingerade with ice. Two drams of Ispagula and two drams of linseed bruised with a lump of sugar-candy, infused in 4 ounces of water for 2 hours and strained through a piece of linen, with or without the addition of a piece of ice, may be taken in tablespoonful doses every 15 minutes for the relief of vomiting. One part of camphor water and three of ice water is also good for the same purpose.

PHYSICIAN IF CASE SERIOUS.—If the case be suspected to be one of cholera, a doctor should be called in at once. Sufferers of chronic dyspepsia are sometimes subject to diarrhoea and vomiting of an acute nature, which as they often subside of themselves without much treatment, excite no fears in the patient's mind. At last a day comes when this neglect proves fatal, so that when the doctor comes in, he pronounces the case to be hopeless. No attempt should therefore be made at self-treatment in these cases.

ACIDITY.—If there is any heart burn or acid vomiting, half a teaspoonful of bicarbonate of

soda mixed with a little lime water should be taken every 2 or 3 hours until relieved.

HOW TO MAKE LIME WATER.—One ounce of slaked lime is well washed with water, then half a gallon of water is added. The lime is at first well mixed with the water, then allowed to settle down. In about an hour, the colourless water is carefully poured out, and kept in a well corked bottle. Dose for an adult 1 to 2 ounces, for a child one year old $\frac{1}{2}$ to 1 dram (30 to 60 drops.)

SUGARED LIMEWATER; LIQUOR CALCIS SACCCHARATUS.—Is prepared by adding slaked lime 1 oz, sugar 2 ozs. to water 1 pint as above and pouring off the clear liquid. Dose 15 to 60 drops with water or milk. For a child 1 year old, 5 to 10 drops. Double this for a child 5 years old. It is specially suited to infants suffering from vomiting of curdled milk.

FOUL GAS ERUCTION.—When there is belching of foul smelling gas, take a squeeze of lemon or lime juice in half a bottle of soda water, add a drop of peppermint oil and drink slowly. A little ginger syrup or Ajwan water,—Aqua Ptychotis, is also a good addition. No spirit is necessary as a rule, but a little brandy or whisky may be taken if the patient is accustomed to their use.

PAIN OR GASTRALGIA.—Called also dyspeptic colic is very severe. The patient rolls in bed and screams in agony. For its relief take two drops of peppermint oil or the same dose of the oil of cinnamon, aniseed, or cloves or a drop of creasote with one or two drams of Brandy and an ounce of warm water. It may be necessary to repeat the dose every two hours or oftener, up to 3 or 4 doses. Should the severity of the pain make it necessary to call in a doctor, and he consider it necessary, he may give an opiate, or a dose of morphia by the mouth, or a morphia injection to put the patient to sleep. But the patient should never use opiates or morphia of his own accord.

EXTERNAL APPLICATION.—Rubbing over the abdomen with a liniment composed of the oil of turpentine or cajuput with camphor is very efficacious. The rubbing dislodges the wind of the flatulence, sending it up or down, relieves pain and stimulates the skin. Any bland oil, cocoanut, linseed or mustard, may be used in an emergency. If the patient is an infant, rub warm castor oil on its abdomen. This will dislodge the wind and act as an opening medicine. Give the child teaspoonful doses of aniseed water internally to help the action of the external application.

MUSTARD PLASTER.—Should the pain be confined to the left side of the abdomen—in the

stomach—and specially if the vomiting and retching continue, a mustard plaster should be applied to the part. It may be had in the chemist's shop, or made at home by rubbing a handful of common mustard with two or three red peppers on the domestic stone slab used all over India, for making condiment pastes. Just enough water should be added to make it a thick paste, and the grinding stone should be used with force enough to make the paste fine and impalpable. This should be spread on a piece of stout cloth six-inches long and four broad, and applied over the left side of the abdomen in cross direction, just below the last rib, kept for 20 to 30 minutes, then taken off and the part smeared over with butter, or vaseline.

POULTICES.—Heat often works wonders in the treatment of so many diseases, that to the various methods of applying it has been given the name, "Thermopathy" or heat cure. Its remarkable power of relieving pain is nowhere more manifest than in the treatment of the colic of dyspepsia. The writer has often found it superior to all medicines external or internal. It may be applied as a large linseed meal or bran poultice spread on thick cloth, covered over with some additional layers of cloth, and changed every hour or two, according to the urgency of the case.

FOMENTATION.—Fomentation with flannel wrung out of hot water, is one of the handiest methods of relieving pain. Two pieces of flannel are used. One is squeezed out of water and spread on the patient's abdomen, the other is soaked and being wringed gets ready to be used, as the first becomes cool and is taken off.

SALT-BAG.—Or as a dry fomentation in which about a pound of powdered common salt, enclosed in a loose linen bag, is heated over fire, and applied for 20 to 30 minutes at a time.

HOT BOTTLES.—Hot water poured in a glass bottle and applied over the abdomen, after well corking the bottle, is an excellent measure for keeping the heat for a pretty long time. It is a neater process than applying the moist fomentation or poultice. If the hot bottle be wrapped in a wet cloth, you get all the advantages of a moist fomentation, without its inconveniences. This heat lasts much longer.

INDIA RUBBER BOTTLE.—The India rubber hot water bag or bottle, keeps the water comfortably warm for an hour or more, and may be used in such cases,

THE DRY COMPRESS.—In both acute and chronic dyspepsia, other than nervous, a dry bandage of flannel, over the abdomen, is productive of very

satisfactory results. The width of the flannel should be such as to cover the space from the breast bone to three inches below the navel, and its length such as to go slightly more than one round over the abdomen and loins. It is to be kept fastened in front with a couple of safety pins. It keeps the body heat uniform, and prevents chilling of the abdomen, and is thus an excellent thing for dyspepsia, diarrhœa, dysentery and liver complaints.

RUBBER BANDAGE.—A broad rubber bandage, applied over the abdomen keeping it in compression for one hour after meals, has in the hands of Wettendorfer, been productive of excellent results in curing irritable and painful dyspepsia.

CALM AFTER A STORM.—In the majority of cases, the above treatment gives complete relief. The vomiting and diarrhœa subside and sleep comes like a calm after a storm, from which the patient awakes after some hours, cured, though still very weak.

LIQUID FOOD.—No solid food should be taken for a day or two. Liquids like gruel made of sago, barley or rice, should be the principal food with or without boiled fish or chicken soup. Tea or Coffee in very weak infusion, with just sufficient milk to give it a slight colour, may be taken after

all symptoms have subsided. Gradually milk and soda water, mixed half and half, may also be taken, but not undiluted milk.

SOLID FOOD.—Forty-eight hours after all symptoms have subsided, old rice well boiled and white fishes boiled, or in soup, may be taken. Chicken soup or pish-pash, sago, soojee or corn-flour and milk, and toasted bread in 3 or 4 days. No vegetables other than brinjals and green plantains well cooked should be taken for 4 or 5 days and no chops or steaks.

SECTION (2) CHRONIC IRRITATIVE DYSPEPSIA, CHRONIC GASTRITIS, CHRONIC GASTRIC CATARRH, OR ACID DYSPEPSIA.

CAUSES.—Frequently those described in the first chapter. This form of the disease is rarely a sequel of the acute attack, but is an independent variety and creeps on stealthily. Cold is very often a cause. So are hasty meals, irregular hours, too much fatty food, cold drinks and idleness. It is sometimes the cause, but oftener the result of phthisis, diabetes, gout, Bright's disease and malaria.

SYMPTOMS.—Loss of appetite. In severe cases absolute disgust on sight of food,—anorexia, nausea or vomiting, eructation or rising of wind. Pyrosis or waterbrash in which acid, bitter or tasteless water is brought up. Furred or coated

or pale, flabby teeth-indented tongue. Foul breath, disgusting to those who are close by. Sweetish, bitterish taste, or loss of all tastes—in-
sipidity, burning feeling behind breastbone or
root of neck. Irregular action of bowels, some-
times costiveness, at others diarrhoea, colic
pains in the abdomen at intervals. Headache,
giddiness, palpitation with a sense of pins and
needles pricking in the heart. The three most
important symptoms of this variety of dyspepsia
are acidity, wind and colic. These require sepa-
rate description:—

(A) ACIDITY.—This is the most prominent
symptom of chronic irritative dyspepsia. Under
the heading of “abnormal gastric juice” we have
seen how this juice is sometimes secreted in smal-
ler, at others in larger quantities. (1) It is the
excessive formation and secretion of the hydro-
chloric acid of the gastric juice which often causes
“hyper acidity”—an extremely acid condition—in
the stomach, so that in many cases, shortly after a
full meal, like breakfast, a feeling of burning be-
hind the breast bone becomes troublesome. (2)
But in the majority of cases, it is the fermenta-
tion of half chewed rice, bread and other starchy
foods together with the butyric fermentation set
up by butter, ghee, lard and other oils that causes
the acid. (3) And if lactic acid like sour *Dadhi* or
curdled milk, tartaric, malic, citric acid of fruits

be taken with such food, it becomes like adding fuel to fire. In about a couple of hours after the meal, a severe burning sensation is felt in the chest and throat, and a burning sour liquid comes up in the mouth, and sets the teeth on edge, or a sour or insipid water brash is followed by headache and a feeling of weight in the abdomen. (4) The mischief is increased by the acid secretion tightly closing the pyloric orifice for a long time, which prevents the usual passing out of the food into the duodenum; so that the embarrassment in the stomach makes the patient intensely miserable, until after a slow chymification, the food passes out of the pylorus, giving him a gradually increasing feeling of ease and lightness or, as more frequently happens, the whole load of food, now awfully sour, is brought up in vomiting and he feels immediate relief.

TREATMENT OF ACIDITY.—CHAKRADATTA advises cold water drinking to dilute the acid and produce easy vomiting. Warm water does it better. For the relief of acidity the same authority prescribes raisins, sugar, honey and powdered myrabolan (Haritaki) in equal parts, to be taken after washing out the stomach with vomiting. The chemical treatment consists in taking a dram or two of Bicarbonate of soda, dissolved in a little water. This gives instantaneous relief. The alkaline soda combines with the acids of the stomach,

and gives off an outburst of carbonic acid gas, which comes out through the mouth with a "Hay-oo" sound. The patient is at once relieved. Taken in 30 grain doses shortly after breakfast or dinner, bicarbonate of soda will not only neutralize any acid already poured out in the stomach, but will help the digestion of starchy food, by supplementing the action of saliva and converting starch into dextrine. This should be remembered. Lime water, plain or sugared also neutralizes the acid, and so does *pan* chewing. Light carbonate of magnesia in 5 to 10 grain doses may also be taken, with or without the bicarbonate of soda.

One drop of Tincture of Iodine in an ounce of water, or one drop of carbolic acid in a teaspoonful of honey, or one drop of creosote in a teaspoonful of bicarbonate of soda, will prevent vomiting, check fermentation, and relieve the pain of gastralgia. Creosote is best taken in the shape of capsules of one drop each, as sold in the shops. If there is diarrhœa with the acidity, the best thing is the aromatic chalk powder of the pharmacopœia. It is prepared by mixing 4 parts cinnamon, 3 nutmeg, 3 saffron, $1\frac{1}{2}$ cloves, 1 cardamoms, 25 sugar, and 11 chalk. These ingredients are harmless and available in almost any Indian village. It does not matter if you fail to get the saffron. But you must get the other

ingredients, powder and sift them, then mix all together, put in a bottle and label "Aromatic chalk powder, B. P." Dose 10 to 60 grains. It is a very good thing both for acidity and diarrhoea of children, as well as adult persons. It should not be given if the patient is costive.

HOW TO PREVENT ACIDITY.—All habits like too much tea drinking, eating acid food, and hasty meals should be given up. A pint of warm water with 20 grains of boric acid dissolved in it, drunk, and vomiting induced after this drink, is a very good remedy for preventing acidity, if repeated for 4 or 5 days or a week. "Drink salt water" says CHAKRADATTA "and vomit", Taka diastasa in 2 or 3 grain doses, is undoubtedly of value in the acidity of rice-eaters. One dose of Lactopeptine 10 to 20 grains, immediately after a meal, and taken after the two principal meals of the day, will often prevent the formation of acids. Fifteen to twenty drops of the thick milk of the papaya fruit, or a dram of the pressed out juice of the green fruit, taken with a little sugar or honey, often helps the digestion of meat, fish and eggs, cures giddiness and prevents acidity. Four drams of the milk of cocoanut, an hour before breakfast, is a splendid food-medicine for the cure of habitual constipation and prevention of acidity, and a glass of water of the green cocoanut fruit is one of the best remedies for the prevention and cure of acidity. Lime

water and vegetable charcoal powder, act the former by neutralizing the acid, the latter by absorbing the gas.

The patient if a city resident, should retire to the country, or live on the sea-side, or up on the hills. He should be an early riser, have a morning exercise and cold bath. Where cocoanut is not available, soda water or Vichy water should be taken after meals.

HYPER-MOTILITY—Rapid motion of the stomach, as in a railway carriage, especially after meals, causes great acidity. It may also be due to nervous influence. It is called hypermotility or excessive motion, and can be corrected by the patient lying on the left side, by olive oil in liberal doses, by residence in the country and a quiet life.

IN INFANTS.—Great acidity often causes infants to vomit up curdled milk and retch. It is due to over-feeding, bad milk of the cows, or the poisoned milk of dyspeptic mother. In these cases mix pure milk of healthy cow with soda water, half and half, or give a dose of bicarbonate of soda or mix milk with lime water.

(B.) WIND. ITS ORIGIN.—Whenever you hear a person belching up a large amount of wind shortly after a meal, or without any apparent cause, you may rightly infer, that the person is suffering from dyspepsia. The wind is such a tell-tale

symptom of this disease, that it will proclaim its existence, in the most undesirable situation, where we do not want it to advertise itself, or where we are ashamed of it. What is the cause of the wind ?

- (1) Certainly the most powerful cause is the decomposition of the food in the stomach, duodenum and intestines. Food taken hastily or in too large a quantity, gastric juice secreted too much or too little, will lead to decomposition. And so will a stale, rotten or putrid condition of food, which sets free highly offensive gases, disgusting to the patient and those who are close by.
- (2) Sir Lauder Brunton has shown that as the dyspeptic unknowingly swallows a large quantity of saliva, to destroy the extra acid of the stomach, he swallows a lot of air with it, so "that the most frequent cause of flatulence in the stomach is excessive swallowing of air" *
- (3) There is in the trachea and bronchi of all living persons a life long supply of air. There is also a perpetual supply of the same stuff in the œsophagus of most dyspeptics owing to the attempt, the patient makes to drive out of his stomach the wind, which in its turn brings down a certain quantity of outside air into the gullet. The spasm of the stomach drives such air through the mouth, as will be seen in the next section.

* Disorders of Digestion p. 29, London 1893.

TREATMENT.—As in acute irritative dyspepsia. For dislodging wind, let the patient lie on the leftside and an attendant smearing his hand with warm oil, gently rub the abdomen from left to right, then upwards on the right side, turn to left and gradually rub down the left side from above downwards. Repeat for 15 to 20 mts. This will dislodge the wind from the intestines and stomach. Or let the patient rest on the knee chest position, i.e., rest his hips and back on the knees and his front on the elbows, and the attendant perform the same movement. Avoid supper, stop taking milk for some days, eat pan with ajwan, stop vegetables for some days, take meat and fish. Peppermint oil 3 drops in water three times a day. For medicines see page 49-50.

(C.) COLIC.—The colic of chronic Irritative Dyspepsia is the patient's most terrible enemy and often very peculiar. The pain comes on at intervals of from $\frac{1}{2}$ to 3 or 4 minutes. The patient feels as if the abdomen has been tightly grasped by an iron hand twisting and tearing it to pieces. So intense is the suffering, that he rolls in bed or on the ground, or runs about the room and presses the abdomen with anything that comes in his way. He yells and screams in agony. By and by the pain lessens, and in a few minutes passes completely off. Then in a few minutes more, it comes back, with the same severity as before, or more. So

It goes on, until vomiting or purging or the passage of wind upwards or downwards gives some relief. Fortunately such extremely painful attacks do not come every day, but only when some particular indiscretion of food or habit has brought it on. It may come at intervals. Treatment as in acute dyspeptic colic.

DIET IN CHRONIC IRRITATIVE DYSPEPSIA.

The diet is of the utmost importance.

(a) ACID FREE DIET. Unripe and sour fruits, tart pies and pastry, sour, curdled or butter milk and all other acid foods must be avoided, as they increase acidity.

(b) SALT-FREE DIET. Salt increases the secretion of gastric juice and its hydrochloric acid. But as our object is to reduce acidity, we should make this secretion as little as possible by making the diet contain as little salt as we can. All cooking should therefore be done without salt. But the patient may be given salt in a cup during meals from which he may take a little, if the desire to do so is great. As spices and condiments excite gastric secretion, these also should be withheld.

(c) OILY AND FATTY FOODS. These retard the emptying of the contents of the stomach. Now, when owing to the irritation of a large quantity of acid, the swinging movement of this organ is quick, the food passes rapidly out in a half chymified

state, and sets up irritation in the duodenum, and what remains in the stomach is highly acid. Therefore many physicians advise such patients to take butter and oils with their food, and milk cream, olive oil, milk puddings and flat cakes fried in butter or ghee, and as such called puree or loochy. Some times however the butter sets up butyric ferments and makes matters worse. For this reason, the patient must find out for himself what fat or oil agrees with him. He will find vegetable oils more agreeable than animal fats.

(d) EATING FREQUENTLY IN SMALL QUANTITIES. In order to avoid damaging the stomach by too much secretion and to ensure quick digestion, food should be taken 5 or 6 times a day in small quantities at a time. Indian writers agree on this point. Thus Chakradatta says "give him small quantities of food at frequent intervals in this form of Dyspepsia."

(e) RICE BREAD, VEGETABLES AND FISH should be well chewed.

(f) STARCHY AND DRY DIET. Neither the Western mode of starting a meal with animal soup nor, the Indian one of beginning with a bitterish dish is suitable, as both increase secretion of gastric juice. The best plan is to begin with dry toast, crisp flat bread, boiled, or roasted rice, or other dry food and chew it well.

(g) Meat should be taken as chops or steaks in the middle of the meal. *All dals* should be avoided, milk should be taken with soda water or lime water.

(h) Rice eating dyspeptics with much acidity, should not eat rice husked out of boiled paddy, but should eat fine *Atap* rice made by husking sundried paddy, as the latter contains more gluten and vitamines and causes less acidity. The Balam rice of East Bengal is like poison in acid dyspepsia.

(i) The advice "Finish the meal with some sweet" is here applicable as such food destroys extra acid.

(j) Take some minutes' rest after meal.

(k) Whey if fresh, is a good drink in acid dyspepsia.

SECTION 3. ATONIC DYSPEPSIA.

CAUSES.--Atonic dyspepsia is the indigestion of weak persons, with deficient secretion of gastric juice and want of muscular energy. Wasting and debilitating diseases, like malaria, enlarged liver and spleen, phthisis, tertiary syphilis, *sootika*, the result of frequent child bearing, and all diseases producing anæmia, bring on this form of the disease. Irritative dyspepsia, described in the last section, changes after a few years into this form. For the

stomach after secreting too much gastric juice for a long time, becomes exhausted and unfit for its duties and going to the opposite extreme, pours out but very little; so that the gastric juice becomes less in quantity, deficient in quality; the stomach contracts with difficulty, chyme forms with delay and passes out very slowly.

SYMPTOMS.—Patient has no desire for food, yet eats fairly well. But the food lies like a load in the stomach. After some hours swelling of abdomen, heartburn. Eructation of simple or bad smelling wind, gives relief. Pyrosis or water brash is often present. It comes on with a burning sensation in stomach, somewhat like, but different from hunger. And an acrid watery fluid rises up in the mouth, with or without pain. What is this water? It is the saliva which the patient frequently swallows, but which in many cases of atonic indigestion is prevented from going down, by spasms of the œsophagus, and is forced up in the mouth, sometimes with the gastric juice, at others without it.

SPASM OF THE STOMACH.

This is another unwelcome informer of atonic condition. The patient in the middle of a meal is seized with a severe spasmodic pain in the left side, which fortunately does not last more than a minute or two. It is due to a sudden, spasmodic contraction of the stomach, upon the food

falling in it. The pain is a comparatively rare symptom. Far more frequently, the spasm is only a painless attempt of the stomach to "raise the wind." There is very little air, but the organ attempts to get rid of some offending matter either vitiated gastric juice, or mucus, and in this attempt expels any air that may be in it, or oftener in the trachea or œsophagus. It may be called tracheo-œsophageal eructation or "throat belching," and is an attempt of nature like sneezing or coughing for driving out offensive matter.

TREATMENT—The treatment is the opposite of that in acid dyspepsia. Increase appetite by better secretion of gastric juice. Take Bicarbonate of soda and powdered ginger each 10 grains twice or thrice daily, an hour before meals. If due to malaria add $\frac{1}{2}$ a grain to 1 grain Quinine Hydrochlor, to each dose. One to 4 drams of whisky in a little water half hour before meals, twice daily may be taken if patient is very weak.

DOMESTIC REMEDIES.—The Indian grandmother's remedy in such cases, is a combination of powdered ginger, rock or sambhar salt, and Ajwan, in doses of about 5 grains each, half an hour before breakfast or dinner. It increases appetite. Ajwan is called in Sanskrit *Agni Bardhak* or appetizer.

BLACK SALT.—When the liver or spleen is also enlarged *Kala neemuk* (or black salt or *Bit-laban*)

may be substituted in the above domestic prescription for the *Sombhar salt* in the same doses as the latter. Besides being an appetizer, it has considerable power of reducing the size of these two organs. *Kala neemuk* contains common salt and sulphuret of iron and has a peculiar sulphurous smell. Eight or ten grains of Bicarbonate of soda taken, shortly before meals, are of great benefit. A larger dose, 16 to 20 grs. requires a longer time to produce the full effect, and should be taken an hour before meals.

BITTERS.—Bitter medicines improve digestion by altering the condition of the stomach. They remove mucus, and increase the flow of gastric juice. Such are Calumba, Quassia, Chireta and Gentian. An ounce of the infusion of any one of these, made over-night, and taken the first thing in the morning or an hour before breakfast, acts as an appetizer. The Indian custom of starting a hearty breakfast, with a bitterish vegetable dish, is thus based on sound principle in atonic dyspepsia. The tender leaves of Patole or Neem made into soup or curry also give good results.

OTHER FOODS—Soups or extract of meat taken at the beginning of a meal increase gastric juice secretion, and as practised by Europeans is very valuable in this form of the disease.

DRY DIET.—Toast without butter, boiled rice without liquid food, should be eaten well chewed.

Thorough chewing excites both salivary and gastric secretion. Avoid butter, ghee and oils but take more salt with food.

ACIDS AFTER FOOD.—For supplementing the flow of gastric juice, ten drops of dilute Hydrochloric acid with 30 drops of Pepsin wine in an ounce of water, should be taken shortly after breakfast or dinner. Lactopeptine in 10 to 20 gr. doses may also be taken. Ripe tamarind, a year or more old, is highly beneficial and is extensively used either alone or stewed with fish or vegetables. Lime or lemon juice at the end of a meal in doses of half a fruit a day, not only supplements gastric secretion, but prevents stone in the bladder, a formidable disease to which dyspeptics are liable. Green mangoes, plums or hog plums pickled, and ripe fruits especially black-berries after meals, help digestion. Ripe guava fruit skinned, boiled, mashed with sugar, is very efficacious especially if costiveness be present.

TREACLE.—Molasses or treacle produce healthy action. Chakradatta gives many prescriptions of which it is an ingredient. It should be taken in the morning, on empty stomach, followed by a drink of warm water 10 minutes afterwards. The dose is about the weight of 2 to 4 rupees. The older the treacle the better.

THE THREE MYRABOLANS.—These are the chebulic (Haritaki), Embelic (Amloki) and Beleric (Bahera) myrabolans. Of these, Haritaki is the best; which "Taken after a meal," says Bhavaprakash, "relieves all disorders due to improper eating and drinking or to defects of humors." It is used in 10 to 20 gr. pieces for mastication after breakfast, to increase saliva and gastric juice and as a confection for producing a gentle action of the bowels. The Embelic and Beleric myrabolans have similar but weaker effects.

AYURVEDIC MEDICINE.—Chakradatta opens his chapter on the treatment of dyspepsia with the following prescription:—Take of pepper, long pepper, ginger, Ajwan, *Saindhav* or rock salt, black and white cumin seeds and asafoetida, all the eight in equal parts, finely powdered, sifted and mixed together. He calls it *Hingastak*. The writer has given it the name "Pulvis Asafoetidæ Compositus" or the compound powder of asafoetida, so that this valuable combination may be known to English reading patients and doctors. If taken at the beginning of a meal in 5 to 10 gr. doses, with or without butter, it increases appetite and relieves wind and colic.

To this class belongs Bhaskar-laban a preparation containing 18 ingredients, of which 4 are the different salts and 14 spices and carminatives.

It is a good remedy in atonic and intestinal dyspepsia in 5 to 10 gr. doses and may be had of all Ayurvedic chemists.

SECTION 4. DILATATION OR INCREASE IN SIZE OF STOMACH.

CAUSES.—This extremely submissive organ patiently endures the tyranny of too large quantities of food and drink, and tries to do the extra work inflicted upon it, by increasing its own size, until at last it fails to accommodate itself to the increased work. Too much eating or drinking for many years is, therefore the most common cause. Dr. Alibutt is of opinion that too much tea drinking leads to it. The writer believes that in the rice eating parts of India, dilatation is more common than in those where bread is eaten. For when boiled, every grain of rice swells up to nearly 3 times the size of the dry seed, so that the volume of half a pound of rice well boiled, taken by an average man at a meal, together with fish, vegetables and liquid foods, distends the stomach inconveniently for at least half an hour after every meal. Such distension once or twice a day, must eventually lead to dilatation.

SYMPTOMS ;—Percussion or striking with two fingers of one hand over two fingers of the other, spread on the left side below the ribs, produces a dimdom sound. If any liquid be in the stomach,

shaking the patient will produce a splashing sound. The patient himself hears it. Undulatory motion of abdomen is visible to outsiders. In severe cases, left side of abdomen is swollen, other parts depressed. Pain, vomiting, foul smelling, belching, constipation and flatulence. To find out how much the dilatation is, drink a bottle of soda water quickly, so that you swallow all the gas. This will distend the organ and show the extent of dilatation.

TREATMENT.—All fermentable or gas producing foods;—eggs, onions, cauliflower, cabbages, cucumber, radish,—should be entirely avoided. Rice eaters should change diet, and live on well toasted bread, or hard baked flat bread. Avoid heavy meals, take food and drink in only small quantities at a time and buttermilk at the end of a meal.

Of remedial agents the best is washing out the stomach, electricity and massage. For massage let the patient lie on his back, and elevate the thighs with a pillow below the buttocks. An attendant grasps the left part of abdomen just, below the ribs and gives it a gentle kneading motion, at first for 2 to 3 minutes, then increasing day by day up to 8 or 10 minutes.

Of medicines, a drop or two of the oil of cajuput, peppermint or cloves on sugar, half an hour

after meals is valuable. Hingastak (Pulv Asafoetidae Co) in 10 grain doses 5 minutes *before* the principal meal, is very efficacious. Boric acid 5 grains shortly *after* meals prevents putrefaction. Quinine Sulph one grain, and ginger powder 5 grains half an hour *before* meals, or powdered vegetable charcoal finely sifted in 6 to 10 grain doses an hour *after* a meal will prevent putrefaction. The abdominal bandage, mentioned before should be constantly worn. Food should be very thoroughly chewed and no water taken with meals. A gentle walk for a few minutes after a meal, then rest in bed on left side for half an hour without sleeping.

SECTION 5. DUODENAL DYSPEPSIA OR DUODENITIS.

CAUSES.—Inflammation of stomach, liver, gall bladder or pancreas.

SYMPTOMS.—Appetite irregular or voracious, gnawing sensation in stomach, and craving for food. Constipation with impaired bile secretion, stools light coloured, greyish or foul smelling. Urine deposits a slight sediment. Right side of the abdomen, below liver is full, a few hours after meals, distressing feeling on that side, extending up to the right shoulder; often mistaken for liver disease, lasting for 2 to 4 hours at a time. The gnawing or craving appetite, the bulimia, is

relieved as soon as food is taken. Painful feeling comes on some hours *after* meals, when the food has passed into the duodenum. There is no fever, but a burning sensation in the palms of hands, soles of feet, or the abdomen, is complained of. Headache and giddiness are also present. When liver is much affected, biliousness. When there is ulceration of duodenum these symptoms are very distressing. If you press the abdomen on the right side, the spot over the ulcer is found to be very tender. Patient cannot lie on the right side.

TREATMENT.—Food should be so easily digested in the stomach, that little or no portion of it may pass out and distend the duodenum. Chicken or fish soups or vegetable soups well strained, white fish, sago, barley or rice gruel, lentil or *moog* dal soup should be the principal diet for a few days. Fruit juice—grapes, pomegranates, orange—well sweetened, may also be taken.

For medicinal treatment, the disease to which the duodenitis is due should be treated first, viz., gastritis, hepatitis or pancreatitis. Carminatives described before, for the stomach trouble may be given with advantage. Fomentations, hot bottles, poultices, mustard plaster or rubbing turpentine oil for the pain as advised for acute dyspepsia. Flannel or rubber bandage.

Three drops of Tincture Belladonnæ in an ounce of water taken 15 or 20 minutes before food, checks excessive secretion of gastric juice and duodenal fluid. Heavy Carbonate of Magnesia 5 grains and Bicarbonate of Soda 30 grains in an ounce of water, half an hour after food, destroys excessive acid fermentation.

SECTION 6. INTESTINAL DYSPEPSIA.

CAUSES.—Long standing dyspepsia of stomach or duodenum, will allow undigested food from these parts, to pass down into the small intestines and set up irritation there. Hard indigestible substances, will in their downward course, from duodenum, be decomposed, and form large amount of awfully offensive gases and pain. Deficiency of intestinal secretion or of the pancreatic juice prevents the digestion and absorption of albuminous and oily foods in the intestines. So does deficiency of bile secretion, exposure to cold and night keeping.

SYMPTOMS.—Flatulence, some hours after a full meal, commonly in the afternoon, or in the small hours of the morning. Patient gets up at night, troubled with a dull abdominal pain, and wind with sulphuretted hydrogen, giving out the smell of rotten eggs, and passed upwards through the mouth, as the pylorus gives way, and downwards through the anus. Percussion or striking with finger-ends

over the abdomen produces a "dim-dom" sound. Abdomen swollen, breathing uncomfortable, pain sometimes so intense as to make the patient scream and roll in bed. The wind in its passage through the intestines produces a gurgling sound, sometimes so loud that it can be heard at a distance of twenty feet. Balls of wind, on the abdomen are seen, passing off in an hour or two or remaining for several days. At last a copious purging comes on and relieves the patient, or the wind continually passing up and down relieves the distended bowels.

In chronic cases, balls of wind either below the liver, or lower down, form and produce a dull pain lasting for days and weeks. It puzzles the patient and the doctor to find out what it is. The pain and swelling become less when the bowels are empty, more when they are full.

In some unfortunate cases the colic of intestinal dyspepsia seems determined to remain a life long enemy. The unwelcome visitor pays its grim visits monthly, fortnightly, weekly, sometimes daily. The spasmodic contraction of the intestines upon the food passing through this district, is so tight and the pain so excruciating that the sufferer is afraid of taking the most harmless food and trembles with fear long before the advent of the pain. The suffering is beyond all description

that can be given by the pen or the tongue. Constipation alternating with diarrhœa often makes the patient extremely miserable.

TREATMENT.—In many cases nature starts the treatment with a diarrhœa. The patient rises from bed, after a few hours agony and passes one or two profuse motions which considerably relieve him. He also passes wind both ways, which reduces the tympanitis. In chronic cases these symptoms are repeated night after night.

Gentle friction of abdomen with equal parts of cajuput and mustard oil, drives the wind up and down. Fomentation or poultice relieves pain. Two or three drops of the oil of peppermint, or cloves or aniseed on 30 grs. of Bicarbonate of soda, with a little water should be taken every hour or two, according to the urgency of the symptoms until relieved. Two drams of Brandy with 30 drops of aromatic spirit of ammonia and a drop or two of anethi oil in an ounce of water, every 2 hours speedily gives relief. To prevent return of symptoms, the treatment is like that of atonic dyspepsia.

DIET.—In acute stage patient should be in bed and take barley water, sago and rice gruel. Within 24 hours after subsidence of acute symptoms Mellins food or *satti* food, or three or four ounces milk with barely water or soda water. When dis-

turbances are quite over, old rice well boiled, with fish or vegetable soup or chicken soup. Vegetables such as green plantains or young brinjals, potatoes or green papaya well boiled. Bread toasted or the thinner half of flat bread with moong-dal *so ph*. Meat diet increases blood pressure, a constant symptom of this form of dyspepsia and should therefore be stopped until patient is able to digest solid meat.

As digestion becomes very slow when we sleep, this form of the disease is often most troublesome at night. The sufferer must therefore, take a very light meal in the evening for some weeks, allowing himself no food after sunset till next morning. Oils and fats, unripe or over-ripe fruits and all fermentable things should be avoided.

SECTION 7. APPENDICITIS, TYPHLITIS AND PERITYPHLITIS.

CAUSES.—Appendicitis is inflammation of the vermiform appendix, a tube about 5 inches in length and the thickness of a tobacco-pipe attached to the cœcum, the first part of the large intestines. The inflammation is caused either by the blocking up of the tube with faecal or some other accumulation or concretion. We do not well understand the object of this troublesome appendix to the tragedy of human pathology.

SYMPTOMS.—Pain and tenderness in the right iliac region, swelling of the part. Pressure on the left side of abdomen produces pain on the right, stiffness of muscles. The most important diagnostic point in appendicitis is the presence of a minute point of great tenderness exactly two inches from the anterior or front spine of the ilium towards the navel. This is called 'McBurney's point' in honour of the discoverer. No fear need be entertained of the presence of appendicitis without this point. In typhlitis—inflammation of the cœcum, the pain and tenderness are confined to the right iliac fossa, and the swelling is rather oblong. Perityphlitis, is inflammation around the cœcum due to accumulation of faecal or other concretion or to perforation and gangrene of the appendix.

TREATMENT of all the three conditions is nearly the same. Absolute rest in bed, the patient lying on the back with legs drawn up. Fomentations and poultices. Put 4 to 6 leeches; this gives great relief. Opium in 1 grain dose at a time every 3 or 4 hours until pain is relieved. No purgatives. Enema of warm water when acute symptoms subside. Absolute fasting for a day or two, then only liquid food. Rice or sago gruel, fish or chicken soup, dal soup well strained in small quantities. Iodine painting, mustard plaster in chronic case,

stimulating liniment. When pus forms, Mc. Burney's operation.

SECTION 8. COLITIS OR DYSENTERY.

It is intestinal dyspepsia, characterized by pain in abdomen, as in ordinary intestinal dyspepsia, only less severe, with passage of mucus and blood with the motions.

THE TREATMENT.—Castor oil 1 dram. every 4 hours with or without laudanum, one drop to each dose. When bowels are thus relieved, Ipecac in bolus or emetine injection once or twice a day according to severity of symptom. Liquid extract of kurchi, green bael fruit, roasted in hot ashes, and the pulp given with sugar as a food medicine. Liquid food. Rice gruel. The soup of urid (*Phaseolus Roxburghi*) is a demulcent drink. Fomentation and poultice to abdomen. Abdominal bandage. Change of climate.

SECTION 9. DIARRHŒA.

This is as has been seen above, a prominent symptom of intestinal and other forms of dyspepsia. The quantity of food is so bulky, or the quality so bad, or the intestines so weak, that the chyme is not digested. It is thrown down from the upper department and driven out by the lower gate.

TREATMENT.—Fasting, sipping water, or rice gruel or sugared water, and soups often effect a cure. Spt. camphor 5 drops, or aromatic chalk powder $\frac{1}{2}$ dram every 3 hours. Intestinal antiseptics like pepperment, sulpho carbolate of soda, aromatic chalk powder $\frac{1}{2}$ dram every 3 hours. In inveterate cases medical aid should be sought for, in this complaint as well as in dysentery.

SECTION 10. NERVOUS DYSPEPSIA ALSO CALLED NEUROTIC OR EMOTIONAL DYSPEPSIA.

CAUSES.—"Dyspepsia" says Dr. Caldwell "commences perhaps as often in the brain as in the stomach, possibly oftener." Such an intimate connection exists between the brain and the digestive organs, that any disorder of the one, can not fail to produce, sooner or later, a corresponding effect upon the other. Hence it is, that by far the great majority of patients suffering from this form of the disease, are found to be brain workers. In all countries, the studious,—the literary and scientific scholars—the statesmen, and the great leaders of humanity suffer from what may be called "Brain Dyspepsia." Anxiety and sorrow, the pangs of unrequited love, the poisoned darts of jealousy, the stings of envy, hatred and revenge, rob their victims of all relish for food and drink, and bring on an early death. The qualms of

conscience produce persistent indigestion which may be called the "Dyspepsia of unclean conscience." Misfortune which unhappily for us poor mortals, never comes alone, makes its presence conspicuous by dyspepsia and emaciation. Sexual debility, impotence, barrenness and many uterine diseases are the causes of severe indigestion. Lastly, the indigestion of little children consequent to the birth of a brother or sister is caused by jealousy and is a true neurotic dyspepsia.

SYMPTOMS.—Loss of appetite, moroseness, pain in stomach, costiveness, thirst, sleeplessness, headache, giddiness, loss of memory, fainting fits, flatulence, wind, heart-burn, short breath, palpitation. A gurgling sound in abdomen after eating, the movements of the abdomen felt by the patient, undulatory movement from left to right or from right to left. Loud eructation of wind, especially in chlorotic and hysterical girls. Painless vomiting after meals. The sufferer avoids society, wishes to be left alone, sighs or sheds tears so that others may not hear or see. Appetite so capricious that the same food is liked one day, disliked the next. Some feel tired of life and commit suicide, for want of will power to check the morbid desire.

TREATMENT.—No self-treatment is possible in the acute stage. A physician must take charge of

the case. For some days the patient must remain—in bed. As the patient refuses to take food, he or she should be coaxed, persuaded or compelled to take sufficient quantity of nourishment as milk, soups, poached eggs, puddings, port wine. As blood pressure in this form of the disease is low, and circulation poor, a meat diet is beneficial. Soups, chops, steaks of mutton, goat's flesh; and chicken in various forms should be given according to the patient's power of digestion. Milk is a good food. Sleep should be induced by making the room cool and well ventilated.

Of remedial measures the use of electricity is the best. The patient should have a rub down with the oils of the Ayurvedic Pharmacopœia known as Narayan or Vishnu oil, half an hour before bath. After such inunction, a river bath is the best, and a shower bath the next best.

Of drugs internally the liquid extract of *Aswagandha* (*withania somnifera*), Lallor's phosphodyne, and Fellow's syrup are good tonics. Honey is an excellent food medicine in this disease and if taken for a long time is supposed to increase sexual power. Begin with ten drops of dilute phosphoric acid in a teaspoonful of honey half an hour before breakfast and dinner. You may gradually increase the honey to a dessertspoonful and the acid to 16 drops.

When the serious stage is over, the patient may be allowed to walk about, or drive or play and read light literature like newspapers and selected novels, while the above treatment goes on. Music is a great help to the cure of this form of the disease. The patient should either sing or play on wind or string instruments, or hear them, and may attend operas and theatres for an hour or two.

CLIMATE.—In inveterate cases the bracing effect of mountain or sea air should be tried. Better than the mountain is the sea as a true healer. Here the eyes, "see the beatific scene of the mighty watery walls rushing one after the other, the ears hear the roaring of the mighty current having its own cadence and the skin is soothed and lulled by the balmy breeze making you forget the stings and arrows of an outrageous fortune, the deep wounds of sorrow or the agony of disease."*

SECTION II. VORACIOUS APPETITE

Or Bulimic dyspepsia, is as has been seen before, a form of duodenities. It is also a form of nervous indigestion peculiar to children with worms, chlorotic girls, diabetic and insane persons. It is the opposite of loss of appetite and is marked by a voracious desire for food. It can only be

* Author's Book on Puri.

removed by correcting the condition on which it depends. Chakradatta prescribes woman's milk, cooling drink as well as sleep at day.

SECTION 12. DISLIKE FOR FOOD.

It is the opposite condition of the above. It is not only loss of appetite, but positive disgust on seeing or even of thinking of food. It is a special symptom of nervous dyspepsia, liver disorder like hepatitis and gallstones. It may also be due to malaria, pregnancy, and in Western countries to tight corset of females. The patient either abhors food or is satisfied with a few mouthfuls.

TREATMENT.—Papain the active principle of the papaya fruit in 2 to 3 gr. doses, Liqr. Pancreaticus in 20 to 30 drop doses or Lactopeptine in 10 grain doses are all good remedies. Bhavaprakash prescribes a sherbet made of ripe Tamarind pulp mixed with sugar, powdered pepper, cloves and camphor, and made into a sherbet flavoured according to taste; or one part of the juice of ripe lemon mixed with six of simple syrup and a little pepper and cloves in powder. Pickled lemons and plum jams are excellent delicacies and so are ripe pine apples. Mango pickle or chutney made of the same fruit with mustard and salt is much better, as well as

ripe mango. In Burma the *Nappes* is much appreciated.

But in irritative dyspepsia, gastric and duodenal ulcer, acid treatment is impossible. Here the removal of the cause, is the principal treatment. Washing out the stomach and massage of the abdomen are of great value in giving tone to the digestive apparatus. Anæmia and malaria should be treated with appropriate remedies and the patient coaxed to take nourishment, as it is seen that digestion is not so bad as the dislike for food.

SECTION 13. LOSS OF TASTE.

When the tongue is very dry as in acute irritative dyspepsia or strong fever, or when it is coated with a thick fur as in chronic dyspepsia and liver disorder, the sense of taste becomes so dull that food and drink become tasteless. The treatment is to correct the condition on which this depends and clean the tongue daily.

SECTION 14. RUMINATION AND VOMITING.

Rumination is a rare form of dyspepsia, in which the patient brings up into the mouth a portion of the food, shortly after it has been eaten, and chews it again, as ruminating animals "chew the cud." More often the patient vomits up the greater part of the food, about half an hour after the meal, and becomes gradually emaciated, The

writer had a patient, a school boy, 14 years old, who was troubled in this way. Two drops of Fowler's Solution in a little water shortly before breakfast and dinner was prescribed and the patient advised to take easily digestible food and rest after meals. A cure was effected in about a fortnight.

CHRONIC DYSPEPSIA.—When any one of the forms of this disease is 3 months old, or older, it is called chronic or secondary dyspepsia. It is generally irritative in nature and is a troublesome disease, difficult to cure, especially when, after a few years, it passes on to the tertiary or third stage, and the liver or some other organ, is disordered. Then the best treatment is the regulation of the patient's life and habits, by a determined and methodical self-treatment as described in the following chapters.

Chapter IV.

Daily Life In Chronic Dyspepsia.

EARLY TO BED, AND EARLY TO RISE.—This habit certainly makes a man healthy ; and probably wealthy and wise. If you rise daily an hour earlier from bed, than you do now, you will be surprised to find how leisurely you can finish your morning duties and breakfast, instead of hurrying through them, and take rest, before you start for your place of business ; thus securing a better digestion, and a quicker cure of your dyspepsia. Office-going dyspeptics and others in similar position, please think over it.

But to be able to do this, you must needs go to bed earlier. If you want to rise up at 4 A. M., in summer and 5 A. M., in winter, you should retire at 9 P. M. The earlier, the better ; as the old maxim says "One hour's sleep before midnight is worth two hours' after it." There is a heavenly pleasure in sleeping like an infant in the evening, in an airy, noiseless, darkened room, when the world is yet full of busy bustle, and the street air resounding with the rattle of vehicles.

And when you get up so early, you find yourself in fused with a new life, enjoying the stillness of the world, the cool atmosphere, and the carol

of birds. Our ancient sages who aimed at living a hundred years, often succeeded in this attempt, probably because they offered up their morning prayer to the Deity, very early; finishing it within the 48 minutes before sunrise, which they called the 'Divine moments.' Whether we avail ourselves of them or not, these divine moments still return to us every morning: and he that wishes to be free from disease and attain long life, should approach his Creator with his prayer, at this the best part of the day.

WHO SHOULD NOT RISE EARLY.—Patients with heart, lungs or kidney disease; malarious, and anæmic dyspeptics, and those who suffer from extreme weakness should not leave their beds before sunrise.

HOW TO PRACTISE EARLY RISING.—This is only a matter of strong determination, and self-suggestion. Look at your watch or clock when going to bed and suggest to yourself thus :—'I am going to bed at 9 o'clock now, I will positively get up at 4'. In all probability you do get up at the self-appointed time. Night after night this command to yourself is repeated, and morning after morning it becomes easier and easier for you to obey it, till at last the habit becomes your second nature. Or have an alarm clock, wind it up to ring at your proposed hour, and when it strikes,

jump out of your bed, wash your face and eyes and have a little exercise to wipe away the sleepiness.

PREPARATIONS FOR THE COMING DAY.—Manu, the law giver, writes :—"Rise an hour and a half before sunrise, offer up your early morning prayer, read for a while the holy texts, then form your programme for the labours of the day." Besides these, the dyspeptic should have some exercise (Chap VIII) clear the bowels, clean the teeth, scrape the tongue, wash the mouth and face, and take the following drink :—

THE INTERNAL CLEANSING.—In chronic dyspepsia the inside of the stomach is coated with a whitish slimy matter, similar to that on the tongue, in such cases. Unless this dirty coating be removed every day, little gastric juice secretes and digestion becomes very poor. You can easily scrape the slimy matter off your tongue. But it is impossible to do that in the stomach. The only way of cleansing the stomach is to take a small tumblerful, about 10 or 12 ounces, of warm water mixed with 30 grains of bicarbonate of soda, in the morning on empty stomach. Take it in sips or with a spoon, as you drink your tea. The following are the benefits of this drink :—

(1) It gives an internal fomentation to the inflamed stomach, and reduces its chronic inflama-

mation (2) Stimulates it to increased activity and secretion (3) The soda mixes with the dirty mucus and removes it downwards. Just as an earthen pot from which curdled milk has been poured out, still retains some curd. If without washing the pot, you pour fresh milk in it, the milk after a time turns into curd. But if you rub off the curd with soda, wash the pot thoroughly with water and then pour milk in it, the milk remains good. So by cleaning the stomach with soda and warm water you make it fit to receive and digest milk and other foods (4) The water drunk is not all absorbed, but some of it passes down into the intestines, and relieves costiveness from which many dyspeptics suffer (5) It relieves the gnawing and burning sensation, so often felt in the morning in this disease (6) It dilutes acid if present in the stomach, relieves symptoms of acidity, sets free the imprisoned wind driving it upwards as a belch (7) It relieves pain if present (8) It is a harmless substitute for the harmful morning tea (9) It keeps the system well supplied with water, thus preventing the necessity of drinking it with breakfast (10) With the juice of half a lemon, it is a nice drink in atonic and alcoholic dyspepsia (11) It often brings on appetite in about a couple of hours (12) It is a good remedy for dyspeptic giddiness and headache.

COLD WATER DRINKING.—Warm water drinking should be stopped when dyspeptic symptoms have abated, to be resumed as soon as such symptoms reappear. Those who suffer from costiveness should take from half to one pint of cold water early in the morning, in sips or with a spoon. It acts as an opening medicine.

CHARCOAL POWDER.—Wood charcoal in powder, in 20 to 60 grain doses, is a good remedy for fermentation, flatulence, foul gas, eructation and vomiting; and may be taken instead of soda, with warm water, by patients suffering from these complaints.

THE EARLY BREAKFAST, also called **CHOTA HAZRI OR JALKHABAR**.—It may be taken about an hour after the warm water drinking, and is well suited for those who take late breakfast. Those who take their breakfast at about 9 A. M. do not require it. For persons with *Atonic Dyspepsia*, it may consist of an orange, a little ripe papaya, a few grapes or raisins and arrowroot biscuits. In the *Irritative or Acid* form of the disease, molasses or treacle with toast, or molasses with roasted rice (muree or phorui.) The roasted rice may also be taken with small pieces of the pulp of cocoanut. The confection of bael or biscuits and toast with jam. In *Nervous Indigestion*, almonds and milk, a half boiled egg, pomegranates or grapes, a cup of

coffee or cocoa, and toast with butter may be taken. Persons suffering from *Costiveness*, may well take a drink of the sherbet of ripe Bael fruit at this time. The sherbet should be made slightly acid with lemon juice or not according to taste, and sweetened with sugar. Breakfast should be taken at least three hours after this drink. When Bael are not available, other fruits should be taken. In *Diarrhœa or Dysentery*, this meal should consist of roasted green Bael fruit, with sugar, and a drink of barley water, or whey, or butter milk, with a lump of sugar candy.

BATH.—At least an hour after the early breakfast, is the time for the patient's bath. Very weak patients should not bathe at all. If the feeling be sticky or dry, such patients may have a rub down with a wet towel, change the clothes, comb the hair and be ready for breakfast. With return of strength, a 3 to 5 minutes' warm bath may be taken, the head being washed with cold water as the first and the last items of such bath. It may be repeated every 2 or 3 days according to the patient's strength; and every day when he is quite well. Those who suffer from wind and pain in abdomen, should cover this part with 2 or 3 layers of stout cloth, when bathing, so that it may remain dry and escape the chance of a chill. For cold bath see chapt., IX.

THE DRESS.—No time should be lost in changing the clothes after a bath. Dhotie, pyjama or trousers; socks, shirt, waist coat and coat, and in the cold season some sort of shawl or wrapper, should be put on, one after the other, so that a healthy glow and reaction may be felt in a few minutes. Weak patients who feel chilly, should be always warm and comfortable in dress. Those who are subject to fits of wind, colic, acidity or diarrhoea should constantly wear a flannel belt round the abomen next to the skin, so that perspiration may be soaked, and an equal and uniform warmth of the abdomen be constantly kept. All clothes and bed clothes should be kept clean and warmed in the sun. Cotton clothes should be washed in clean water and sundried every day. A hat or turban and an umbrella should form part of the dress, for going out in the sun, rain or cold. In the hot season cotton shirts and coats for home wear, and light silk or alpaca for office dress, should be used. In the winter, cotton clothes, except dhoties and shirts should be used as little as possible, and the patient must be clad warmly both at home and when going out.

A SHORT REST.—If you are called to your breakfast or dinner in the midst of or immediately after some mental or bodily labour, do not sit at once to eat, but rest for a few minutes, so that the

flow of blood may easily return, from distant parts of the body, to the digestive organs, where, during and after eating, it is most needed. Also wash the face, hands and feet, and wipe them dry, before sitting to the meal. It gives a sense of freshness and brushes away worry for the time being. If any medicine is necessary, it should be taken as directed in chapter III.

BREAKFAST IN HASTE, FOR OFFICE GOING or reaching a place of business at an appointed hour, generally at 10 A. M., is necessarily a hasty meal, and causes indigestion. The rule for the patient should be, 15 minutes rest before meal, half an hour to the meal, then 20 to 30 minutes' rest, thus : give up all work at 8-15 A. M., dress, sit to breakfast at 8-30, finish it at 9. Rest for 30 minutes. Start for place of business at 9-30 A. M. "Death runs after the man, that runs after his business, immediately after a full meal." These words of Bhavaprakash should be deeply engraven on the heart of the man, who rushes for his business place immediately after breakfast,

BREAKFAST AT WILL.—Those who can take breakfast at their own convenience may do so between 11 and 12 A. M. The mid-day has been selected in most parts of the world for this meal.

WHAT YOU SHOULD EAT—According to their food the people of India, Burma and Ceylon can be divided into: first rice, fish and vegetable eaters, among whom are the largest number of dyspeptics ; second, bread, meat and fruit eaters, who come next for their share of the disease, and third, the roti, dal and sattoo eaters, who are comparatively free.

Let us take the rice eater as the type of our patient. The rice he eats should be a year or two old, steamed in a cooker or boiled in a covered vessel, served when still warm, without butter or ghee, and in irritative dyspepsia, *atap* rice without salt. When cured he may have a dish of *khichri* or some milk pudding. For the accompanying dishes of fish, meat and vegetables, it is neither easy nor desirable to give the chronic dyspeptic, a cut and dry plan. There are so many ways of cooking these that the patient has a wide range of food to select from. "Select the food the appetite craves for the moment" is a good formula for patients who can take due care of its quantity and quality.

FLAVOUR.—Good odour of food not only tempts us to eat it, but helps digestion by increasing the flow of saliva and gastric juice. Rice eaters have therefore adopted a medicated dietary by mixing curry and other preparations with spices and condiments. This seems to have originated from

the necessity of mixing something savory with such a tasteless thing as rice, the principal food.

VARIETY, NOT SATIETY.—Never confine yourself to a too restricted diet, is the writer's advice to chronic dyspeptics, who in their anxiety to avoid fresh attacks, confine themselves to only a few articles. Even these few, after a time disagree, though they are the most easily digestible. Why is it so ?

We have seen in Chapt. II that in this disease, the gastric juice may suffer from one of 4 disorders, one of which is a vitiated quality. It is this which in chronic dyspepsia makes the stomach fastidious like a spoilt child, so that the patient can not take the most easily digestible or even the daintiest food for a long time. He becomes quickly tired or even sick of it, and longs for something homely or plain. He should therefore, humour, but not pamper, this spoilt child—his stomach. Gratify it with some, but not satisfy it with all it wants. Give it a little, but only a little, of what it craves for.

VARIETY AND CHANGE, A RELIGIOUS INJUNCTION.—So well did our forefathers understand the value of variety and change of food that they prohibited for each lunar day, some particular food and prescribed others on special days and

gave such a sacred character to these injunctions that they have been handed down to the present generation, and are printed and published year after year in almanacs so that they may be religiously observed.

EXAMPLE.—If you are a rice eater, you need not take rice from beginning to end of the meal. Take a few spoonfuls of rice with curry or fish like a Bengalee or Burmese, then a few pieces of flat bread and *dal* like a Hindustanee or Punjabee then a little milk pudding, and finish with a few ripe fruits. Or begin the meal with a plate of soup or porridge, then a few pieces of unbuttered toast with meat or vegetables and finally some ripe fruits or, if a sufferer of atonic dyspepsia, with a little lime juice, curdled milk and sweets. The dishes may be changed from day to day by making a routine, for the week, so that you know exactly what curry or dal, fish or meat, you are to have on Monday, and what on each succeeding day. If necessary you may stop rice altogether and be a bread eater, or if a bread eater, be a rice eater, or eat only well cooked curry without any bread or rice, or be a fruit-eater so long as you are not well.

BREAKFAST. HOW TO EAT.—It seems as if most persons do not know how to eat properly or will not do it. The secret of enjoying and digesting food is to chew every morsel so thoroughly that it

glides down the throat in a liquid state.) Sir Andrew Clark, the late illustrious English Physician advised his dyspeptic patients to count the number of bites before swallowing the mouthful. And his still more illustrious patient, the late Mr. Gladstone, followed the advice so well, that when asked by some one the secret of his long life, replied that he was so old because he gave thirty two bites to every morsel of food that passed through his mouth ; by which he meant that by thoroughly chewing the food he digested it well, and therefore lived so long. The secret of extracting nourishment from food is to so crush it that every atom of it is compelled to serve you as a nutriment. This is the reason why the Indian labourer living on his rough food can work 8 or 9 hours a day. He chews his food so thoroughly and his hunger digests it so well, that he gets more nourishment out of it than the rich man gets out of his half chewed dainties. The habit of chewing solid food down into liquid before swallowing it is so powerful both in preventing and curing dyspepsia, that all dyspeptics *must* practise it if they want to be cured. All persons rich or poor, dyspeptic or not, should practise it, and if they have children should teach them to do it. The following two lines will help them to remember this command of Nature;—

Chew well thy food and teach thy
children, do the same.

'Tis the road to health, long life,
and perhaps to fame.

THE BEST MEDICINES FOR DYSPEPSIA.—The best remedies are hunger, saliva, gastric juice, pancreatic secretion, bile and intestinal secretions. Of these six, the saliva is the easiest to get. It is always at our command, it gives us the highest pleasure of eating, it can be poured out in large quantities simply by chewing the food well; and by converting starchy food into dextrose it produces quick digestion of vegetable food. While chewing goes on in the mouth, gastric and pancreatic secretions commence, in their respective organs, by a reflex action, and bile secretion follows them. Thorough mastication and a large out pouring of saliva are thus sure cures for indigestion. But if man in his ignorance disobeys the laws of Kind Providence, and in a hurry, swallows the food, he is punished with dyspepsia, for which he runs to the doctor and the chemist, not knowing that all the while he is carrying the medicines in his mouth and abdomen. Like the musk deer, who roams about in the mountains of Tibet or the forests of China to find out where the musk is, not knowing that he is carrying it in his own body.

HALF EXCEEDS THE WHOLE. A PARADOX.—Mr. Horace Fletcher has shown that the reason for eating too much is the quickness with which food is swallowed. This makes a large part of the food pass undigested and thrown out of the system as fæcal matter. But as the want of the body remains we have to eat more, which again is thrown out in the same way. But if we thoroughly chew every bit of food, a much smaller quantity gives more nourishment than a larger quantity of half chewed food, a greater pleasure, better digestion, more rest to the stomach and a less amount of fæcal matter.*

WHY RICE EATERS BECOME DYSPEPTIC.—Boiled rice if properly masticated is easily digested. But Indian rice eaters mix so many soups, dals,

*Writing of the Chinese labourers who work hard for 10 to 12 hours a day, at the Singapur harbour, Dr. Mullick remarks—"one can not but be astonished at the hard labour they do, and the strength and solidity they preserve, with only 6 cupfuls of boiled rice and curry a day, and a very slight quantity of fish and meat. Our Indian labourers in their two meals eat 2 or 3 times more. A small quantity of food, physical labour and cheerfulness contribute to their strength. Every sign of good digestion is seen in them. With a mat and a bamboo or wooden pillow, they sleep like dead men, never turning from one side to the other. They go to stool every 3rd or 4th day, finish the work quickly and never pass a liquid motion."

(*Travels in China in Bengali by I. M. Mullick, M.A., M.D.*)

milk and other liquids, that there is little need of using the teeth; and the eater too often in his hurry swallows the food so quickly that it passes down through the mouth with a mail train speed and falls into the stomach with very little of the much needed saliva, which results in acid fermentation. The China man digests rice so well, because unlike the Indian or Burmese he raises the rice from his cup with his "chop stick" only a few at a time and chews it well. He never mixes his rice with liquids nor drinks water with his meals.

OTHER CAUSES.—Boiled rice, mixed with cold water and kept for some hours turns sour. Such rice is eaten in Orissa under the name of "Pakara Bhat" and causes much indigestion. A full diet of boiled rice, if retained in the stomach for three hours or more causes acidity which wheaten bread does not.

BREAD VERSUS RICE—Yet bread eaters get remarkable benefit by giving up bread and taking rice, which if eaten, with the precaution detailed above, is easily digested. It appears that the change is the principal thing required.

CHANGE OF DIET.—Therefore a change of diet from rice to bread or from bread to rice, or from both to a fruit, milk and nut diet in severe cases is important. A change of diet in dyspepsia is like

a change of climate, and produces immediate good results.

ATTENTION TO EATING.—Great is the power of attention on digestion. Reading newspapers or talking shop at such time should not be indulged in. Some sects of Brahmins observe absolute silence when eating, they are good eaters and are not troubled with indigestion.

THE TIMEPIECE AS A DOCTOR—As nearly half the digestion of vegetable starch is effected by thorough chewing, do this portion well, and you are assured by your arithmetic that you have half cured yourself. To do this sit before a running clock or watch and observe the time you spend in eating. It will act as your physician, telling you in its 'tick tack' language whether you deserve to be cured or not. If you spend at least half an hour to your breakfast or dinner you deserve to be cured; if not you don't. The following two lines, the writer made for himself, will help the reader to remember this point:—

Time flees, make haste, finish your works
soon and sooner.

But never make haste in your prayer
and dinner.

Nay, do not eat at all when in a great hurry. For it is better to go fasting once, than to run the risk of many a fast.

WATER DRINKING WITH MEALS.—Every one requires both food and drink ; but if you are a dyspeptic, these two taken together do not agree. Therefore please take them apart. Take the water not less than 3 hours after the breakfast or dinner, so that they may not meet in the stomach and fight. For in about 3 hours the food passes entirely out of the stomach, leaving it clear, and ready to absorb water. Washing down all food with a drink of water is an Indian habit which brings on and keeps up dyspepsia. We should take a lesson in this respect from the Chinaman. (See Incompatible foods.)

LIMIT OF WATER DRINKING.—Too little water drinking in cold countries is as much responsible for causing dyspepsia as too much of it in India. Hence in Europe physicians order their patients, 'you must drink more water.' Here the physician orders 'you must not drink so much water.' For here from the middle of April to that of July too much water drinking is a powerful cause of this disorder. To remedy this you must have a strong will power to resist the temptation to drink, and resolve thus. "I will not give myself more water to drink now than I do in the spring or rainy season. With this object in view have a small tumbler say of 8 ounce capacity out of which to drink at home ; and carry it with you when going out ; so that you may not fall into the

temptation of drinking out of a bigger glass. If unusually thirsty, gargle the mouth frequently with water and throw it out, or drink warm water which appeases thirst with a smaller quantity, or chew *pan* which blunts the sensibility of the throat, and eat less salt.

TEMPERATURE OF DRINKING WATER.—Patients who suffer much from wind and colic, should drink tepid water, so long as these troubles continue. When better, the tepid water may be cooled down to our body heat and drunk. In the hot season, specially if the patient has no pains he may drink cold water, but on no account should ice-water be taken.

DRINKS OTHER THAN WATER.—Soda water, lemonade, gingerade, and all ærated waters are good for a patient with wind and fermentation. Soda water is the only vehicle in which such a patient may take his milk. Lemonade and water sweetened with sugar or syrup neutralize the acid of irritative dyspepsia. But the best drink is cocoanut-water. Lithia water is good when gravels are present in the urine. The water of the water-melon is an excellent drink in acute gastritis and gastric ulcer, and the water of the unripe palm fruit in hiccough. For wines and spirits see chapt., XIII.

QUANTITY OF FOOD AT A TIME.—The experience of all mankind is, that a meal full to repletion is a cause of indigestion, and that the less the quantity of it taken in one meal the quicker is the digestion. A Sanskrit proverb advises, "Fill half the stomach with food, one fourth with drinks, and leave one fourth for the humours to move in." Healthy young men and women can digest a full meal, and hard-working labourers do require it. Not so in both the ends of life. Infants and children require to be carefully fed at frequent intervals in small quantities. And in the other end, from 50 upwards, as old age advances, whosoever wishes to live long and avoid dyspepsia, must gradually reduce the quantity of his food. Lewis Cornaro, the Venetian, who at the age of 40, was a confirmed dyspeptic, from "too freely eating and drinking" determined to cure himself "by the use of food, solid and liquid, such as is generally prescribed for sick persons." By this means in less than a year, he was free from all complaints. Henceforth for nearly 60 years, he took only 12 ounces of solid food as bread, meat, yolk of eggs, fish and meat, and 14 ounces of drink, daily. With this small quantity he became remarkably healthy. In his 83rd year he wrote a comedy and in his 95th year "still sound, hearty, content and cheerful" he writes "let none be afraid of

shortening their days by eating too little." He lived over 100 years*

To the dyspeptic, eating is a necessary evil, and digestion a laborious tug with disease. He should remember the Indian sage's advice "Praise your food, after you have digested it, as you praise the soldier when he returns victorious from the battlefield." He must therefore find out for himself what quantity he can easily digest, and when he rises from a meal should be able to say 'oh, I could eat a lot more.'

NUMBER OF DISHES.—Though 'variety not satiety' is good for the cautious, the number of dishes for those who are not so, should be as small as possible. If you find variety tempts you to eat too much, and makes you worse, punish yourself for a few days by making your whole repast out of one dish. Old men with more money than discretion at their command, often indulge in too many dishes and aggravate dyspepsia. True is the Arabian proverb, "The worst things for an old man are a good cook and a young woman," Give up eating a thing when it tastes very nice.

REST AFTER BREAKFAST.—A 20 or 30 minutes' rest in bed, without sleeping, and with the

*How to regain health and live 100 years by one who did it. *London, Thomas Burtleigh, 1900.*

clothes about the loins loosened for the time being is good, for those who start for their business place, after this meal. Lie on the left side if the dyspepsia is atonic, on the right if acid. The following are its benefits:—(1) By this process the limbs and muscles are relaxed, the blood runs to the digestive organs more freely and vital power acts more exclusively on digestion (2) the limbs being relaxed, the food eaten has a larger space to move in, and chyme forms better and more quickly. (3) The relief given to the brain and spinal cord promotes the flow of gastric juice (4) chimification being better, the subsequent digestion becomes easier (5) it prevents the rise of blood pressure.

OCCUPATION FOR THE RICH.—Dyspeptics not compelled to labour for a livelihood should take a few minutes' rest after breakfast, then "walk slowly a hundred or two hundred steps" as Bhavaprakash advises, "for if they sit idly or sleep they become too stout." They should have alternately business and recreation, brain work and bodily labour, sedentary work and exercise for the whole day; so that both mind and body may regain a well balanced health.

LUNCH.—A lunch is a slight repast between breakfast and dinner, and is necessary for those who go to their work after a light breakfast. It is best to have some food made at home, and carried

to the place of work, and taken about 4 hours after breakfast. Puddings, casein, sandesh, biscuits, are best. A glass of milk and soda-water at this time is well digested. So is the water of a green coconut and its pulp. An orange, a ripe mango, papaya, apple or some other ripe fruit will suit well. But if you breakfast late, this meal is hardly necessary.

LUNCHEON.—A luncheon is a portion of food taken at any time between meals. This meal is not necessary except in very young or old, or very weak patients, who must be frequently fed in small quantities.

THE AFTER-NOON SIESTA.—‘No sleep from sunrise to sunset’ is a good rule in general. But in the hottest part of the year, a short sleep in the afternoon seems to be necessary. The European and the Asiatic, alike find it difficult to resist it. The clerk at the desk and the shop-keeper in his shop often nod their heads unwillingly. The rich man’s servant sleeps on his mat as soundly as his master on his soft bed. Nay, the great heat over-powers the beasts and birds. The dyspeptic if he is the master of his own time, may have an hour’s rest at this time, if he has not taken much rest immediately after breakfast. It is only necessary during May and June, the hottest months.

THE DINNER.—This, the chief meal of the day, may be taken from 1 or 2 P. M. to night fall. The majority of people take it after sunset. Within the last 40 years the middle class rice eaters have adopted the habit of eating flat-bread to dinner, and the bread eaters are adopting a bread and rice diet to the same meal. In acid and nervous dyspepsia a bread dinner, and in intestinal and atonic, a rice dinner are well suited. All precautions mentioned under breakfast, should be observed in dinner, and all indigestible foods like omelets, *polows*, dals, and fried foods avoided. A longer time should be given to this meal, as there is no pressure of work.

EXERCISE.—Walk home from your office or place of business, and if you finish dinner before sunset, have an evening walk.

AVOID THREE THINGS.

AVOID SUPPER.—‘Suppers kill more than doctors cure’ is true in this disease. The punishments for a late dinner or full supper, are bad dreams, disturbed sleep, pains and flatulence. ‘No food after sunset’ should be made an absolute rule in severe cases. When better, a few mouthfuls of khoi (lawa) or muree (phorui) may be taken an hour before retiring, if the patient is unable to sleep, with an empty stomach.

AVOID FEASTS, for 3 reasons. (1) The variety of dishes and their rich flavour may be a temptation to eat too much. (2) As you have to eat slowly you can not keep pace in eating with the other guests. If you eat too quickly you get sick, if too slowly you are left behind. (3) The time of eating, and the manner of cooking may not suit you.

AVOID INCOMPATIBLE FOODS.—In atonic dyspepsia, milk and meat in the same meal do not agree, but curdled milk and meat agree well. In the former case, the gastric juice has to coagulate the milk, and peptonize both the milk and the meat, (see p. 29-30.) This double duty it often fails to do, either on account of the small quantity or the poor quality of the hydrochloric acid and pepsin contained in it, in dyspepsia. But if curdled milk is taken with meat, it helps digestion in two ways. On the one hand no stomach acid is required to coagulate the milk, on the other a large quantity of ready-made lactic acid is obtained in the curdled milk itself, which helps the acid and pepsin of the gastric juice to peptonize the meat eaten. The proteids contained in meat; myosin and albumen, are soluble in salt and acids; and as salt is eaten with curdled milk, the meat is all the more easily digested. The common belief in the country that meat and curdled milk digest each other, and the practice of adding curdled milk to mutton and kid's flesh

during cooking shortly before taking the pan off the fire are thus founded on a scientific basis.

Water drunk immediately after a meal of boiled rice or roasted rice, increases the acidity of the dyspeptic. We have seen that the dextrine formation of starchy food is effected in the mouth, chiefly by the action of saliva, well mixed with the food by good chewing. In the stomach this action is not helped, but rather retarded by the acidity of the gastric juice. Now, if we still further weaken the starch digestion by drinking water with such meal, not only is dextrine formation stopped but an acid fermentation is produced, which increases dyspepsia. But if we drink water after 3 hours when the food has passed out of the stomach, no acidity is produced. Rice eating dyspeptics should remember this.

Eating meat and drinking tea in the same meal produces dyspepsia (chapter XIII.)

SLEEP.—A good sleep is as good as a good medicine. Go to bed at or about 9 P. M., with a mind free from anxiety, and a stomach free from a load of food. If any anxiety trouble you, pray to the Almighty to take its load on Him for the night, and compose yourself to sleep by will power. For inducing sleep, the great Kant advises us to direct

the thoughts on indifferent subjects. The writer believes in non-thinking *i. e.*, thinking of nothing as the best; or fixing the attention on one thing, say the two letters OM. with eyes shut. Make the room dark, cool, well ventilated and free from noise before retiring. If possible do not use it for any purpose other than sleeping in.

A hard bed is better than a soft one; a bed placed north and south better than one put east and west; two thin pillows one upon the other, better for an old man or woman; one thick pillow for a young person. As to the posture some consider it best to lie on the back, as it brings on sleep more quickly and makes breathing and circulation easy. Others find that it causes snoring, and bad dreams. "Sleep not on your back, the posture of a dead man" said Confucius. Indian writers too call it "Shabasan" the posture of the dead, and consider it more suited for contemplation than sleep. The writer's advice is "Left side for digestion, back for thinking, right side for sleep." Infants, old persons, and sufferers of acute dyspepsia should sleep as long as they like. In chronic dyspepsia the rule laid down by Sir William Jones may be followed viz "seven hours to work and seven to soothing slumber given, ten to the world and all to Heaven."

Chapter V.

The Fast Cure.

HOW FAST CURES DYSPEPSIA.—Fast is recognized, all the world over, as a specific remedy, a sure cure for many an obstinate disease. In dyspepsia a fast is a rest, a sleep for the tired, organs of digestion, and does good in the same way, as putting up a broken limb on splint. or bandaging an injured eye helps the cure. Secondly, by sucking up and absorbing the reserve store of fats, water and nitrogenous portion of the body, and along with them the corrupt and poisonous products, the result of disease, from the various affected centres. Thirdly, by throwing out through the excretory channels of fæces, urine, sweat, phlegm, and breath, all the refuse products of the body, and thus restoring to the sufferer his lost hunger, health and happiness,

IT IS NATURE'S PRESCRIPTION.—If proof be needed to show that fast is Nature's method of curing this malady, you only require the patient's evidence, "I never know what hunger is, but have to eat, because I must eat at the appointed time" is the ever lasting complaint of one patient. "The less I eat, specially at night, the better I feel" is the confession of another.

while a third will make the revelation that "there, is a pleasure in a dyspeptic's fasting, which none but a fasting dyspeptic knows." If to these evidences, you add those given by the pain and the acid vomiting after meals of these patients, which are distinct attempts of Nature to drive up the offending food, you find how she is pointing her unerring finger towards the best method of cure, as if saying 'the dyspeptic does not die of fasting but is cured by it.'

MAN AND ANIMALS OBEY IT.—Nay all humanity and the lower animals declare the grand truth that *in disease life is saved as much by fast as in health it is preserved by food.* For some days before the onset of a serious disease, in the period called incubation, appetite disappears altogether. As if Nature with her mother-like affection tries to save her child from the on-coming attack. But when she fails, and the disease actually attacks the individual, she still goes on with her benign attempts. For the strong dislike for food, during the invasion of the disease is only Nature's attempt for saving life. Quadrupeds too obey this law. A horse or a cow, a sheep or a goat, will refuse to eat the best fodder, when ill, giving the first sign of returning health by showing a desire for food, Hybernation of still lower animals, is fast and sleep in lethargy, through the winter.

RELIGIOUS FASTS CURE DISEASE.—Pious Mussulmans tell us, that during the one month's Ramadan fast, in which food is only taken at night, health improves and disease, if present, is cured. The *ekadashi* fast of the higher caste Bengalee widow, in which she has to abstain from food and drink for nearly thirty hours every fortnight, is a sure cure and preventive of dyspepsia. "The celebrated Roman physician Baglivi" writes Dr. Combe, "who from practising extensively among the Catholics, had ample opportunities of observation, mentions that in Italy, an unusually large proportion of sick recover during Lent, in consequence of the lower diet which is then observed in fulfilment of their religious duties."*

ONE MEAL A DAY.—Charaka, the Hippocrates of India considers one meal a day, as the best means of curing dyspepsia. This became a habit among many of our greatest thinkers, and even now the word *ekahar*, *i. e.*, one meal a day, implies plain living and high thinking in high health. The sufferer of chronic acid dyspepsia, who is not compelled to work for a livelihood, or whose occupation does not require him to do much bodily labour, will find this a sure, safe and quick cure. writes Mr. A. O. Eaves in his "Mastery of Death"

* Physiology of Digestion.

"The Greeks when they ruled the world, ate but two meals a day, and the Persians, when in the zenith of their prosperity, but one meal. The downfall of both these nations dating from the time they departed from the simplicity of their living. There is a profound philosophy in the adage that "most people dig their grave with their teeth."

NO FOOD AFTER SUNSET—is the best regimenal treatment in all chronic conditions, where the aggravation is at night, as in intestinal, indigestion, flatulence, diarrhœa, and acid dyspepsia. Also in gravel, gout, rheumatism, albuminuria and nephritis due to dyspepsia.

ABSOLUTE FAST FOR 24 to 30 HOURS.—A voluntary abstinence from all food and drink for 24 to 30 hours is a common thing in India. It increases the power of thinking and concentration of attention and relieves dyspeptic symptoms for about a week. This is the writer's personal experience. Slight forms of fever, cold in the head, and joint pains are also cured by it. It is also good for severe colic, anorexia, chronic acid dyspepsia, rheumatism and gout.

FAST FOR TWO OR THREE DAYS.—A continuous voluntary fast for 2 or 3 days is only possible for an ascetic, absorbed in meditation, and is very rare. Such a man never suffers from dyspepsia. In the disease, under consideration, such a fast,

with an occasional drink of water, ice-water and medicines is invaluable in acute gastritis, appendicitis, acute intestinal dyspepsia, and duodenitis, hæmatemesis or blood vomiting, severe diarrhœa and choleraic diarrhœa.

A FAST FOR A WEEK OR MORE, with only a drink of water, occasionally, is extremely rare, and is only undergone by those who having received no benefit from medical treatment, and suffering awful pains of colic, repair in despair to some well known temple or mosque, and lie down in prayer and fasting. In many of these cases the result is very satisfactory. (see Suggestion Cure).

THE FAST DAY.—For the great majority of dyspeptics the best procedure is to set apart a special or particular day for it, once a fortnight. The days of the new moon or no moon, and the full moon, or the two 11th days of the fortnights ending in them, are adopted throughout the country for fasting. Sufferers of chronic irritative or atonic dyspepsia, gout, rheumatism and asthma, who observe these fasts regularly twice a month, receive great benefit. One sunday every fortnight may be chosen, if more convenient, for the fast.

THOROUGH CLEANSING.—If together with the fast of over twentyfour hours at a stretch, every fortnight, an internal washing be given to the body on those days, the treatment becomes complete.

A drink of warm water as advised in the last chapter or an enema of soap and two pints of warm water, with or without two ounces of castor oil, is sufficient for this purpose.

GRADUATED FAST.—A graduated fast is intended to reduce food in small quantities, a mouthful for instance, every day, from the day after the full moon, reaching absolute fast on the no-moon day, and gradually increasing in the same way, reaching to full meal on the next full moon. It is called *Chandrayanam* or lunar fast and is a religious observance, which may well be imitated, with necessary modification in chronic dyspepsia, when digestive power is seriously impaired.

PARTIAL FAST.—Is one meal on the fast day, and consists of milk alone or milk and fruits or fruits only; and is fit for the old and the weak. The relief is inversely as the amount of food taken namely, the greater the quantity of food taken, the less the relief; and the less the food, the greater the relief.

IMMEDIATE EFFECTS.—Fast gives quick relief. Brain workers will be delighted to find that on the fast day they can do more reading and writing, and that thoughts are clearer and conclusions more satisfactory than on the eating days. The feeling of the body is lighter, and dyspeptic symptoms yield as much as possible with a short fast.

A REMARKABLE EXAMPLE.—Mr. Upton Sinclair, an American gentleman, was sober and vegetarian. He never drank nor smoked, nor took tea or coffee, but had severe dyspepsia owing to overwork and carelessness both as to how and when he ate. At last he could not even digest milk and corn flour, and began to try the fast cure. "I was very hungry for the first day" he writes "a little hunger the second morning, and thereafter to my great astonishment no hunger whatever." "After the 5th day I felt stronger and walked a good deal." "No phase of the experience surprised me more than the activity of my mind. I read and wrote more than I had dared to do for years before." He broke the fast after the 12th day, with the juice of a dozen oranges, and took milk every day in increasing quantities. He gave himself a second fast of eight days and was completely cured of dyspepsia. He took nothing but water and had a cold bath and a rubdown every day during his fast.

THE WONDERFUL POWERS GAINED.—Besides being completely cured, he gained these powers. "I no longer had headaches, went bare headed in the rain; I sat in cold draughts of air and was apparently immune to cold. Above all, I had that marvellous abounding energy, so that whenever I had a spare minute or two, I would begin to

stand on my head, or to 'chin' myself or do some other 'stunt' from sheer exuberance of animal spirits." "I have not only found good health but perfect health. I have found a new state of being, a new potentiality of life, a sense of lightness and cleanliness and joyfulness, as I did not know could exist in the human body." "The fast is to me the key to eternal youth, the secret of perfect and permanent health." (*I, D. News.*)

THE LESSON.—A long fast then, drives away the disease, so completely that it may never return. A short fast, overcomes it for a short time. By careful dieting and occasional fasting for *some hours* or if necessary *half a day*, whenever you find any digestive trouble coming insidiously on, you not only keep the enemy at a distance, but if you are always on the alert, compel it after some months to retreat completely routed.

Chapter VI.

Mental and Nervine Treatment.

(A.) SUGGESTION CURE.

AUTO-SUGGESTION, or self direction, is an intimation to one's self, of an earnest desire to do or get something. Such intimation when sufficiently powerful, amounts to an order and is productive of good results. If you suggest to yourself at bed time "I will positively get up at 4," then in all probability you do so. Or for your sleepless-ness order yourself "Now my little soul, you must give me a good night's rest." The chances are that you will have a sound sleep. If you keep telling yourself and your friends that your dyspepsia is old and incurable, surely it will never be curable. But if with a cheerful heart you assert every day, that you will certainly be cured, then the Natural curative power within you will certainly help you to be completely cured. It will not do simply to hope for a thing. You must if necessary give yourself a stern command. Then the servant self will obey the master self. Auto-suggestion is will power in the ascendant.

FAITH CURE.—Faith has power of curing disease in a mystic way. A quack in whom you

have faith, will often cure you quicker than a learned physician in whom you have no faith. Amulets and metal discs, with sacred words written on them, worn on the neck or round the elbow joint, often cure dyspeptic colic and headache, not so much by diverting the attention of the sufferer from the seat of the pain to these little ornaments, as by the unflinching faith in their curative power. You may call it blind faith, but it cures as certainly as if it had good eye sight.

But in its higher sphere, in the domain of the faithful, faith cure is the result of a firm conviction in the existence of an all-pervading Bliss, and Power which unspeakably loves mankind and is ever ready to do you good. This is not blind faith, it is faith with eyes open. And the stronger the faith, the more the light, and the better becomes the inner sight. Do not think that the reports of faith cures are fables. Faith draws to itself from the unseen world what it is sorely in need of, as you withdraw your deposited money from the bank in an emergency. The air and the sky are full of unlimited Power, and he that has the necessary faith, can draw from them what he requires, even the miraculous. "If ye had faith as a grain of mustard seed, ye might say unto this sycamine tree Be thou plucked up by the root and be thou planted in the sea, and it should obey you," was said by One whom half the world worships as Greater than

man, and the other half regards as a great man* Ask and get back your digestive power. For it is written "I am the fire of hunger in all my creatures."† But faith is invaluable, and can only be earned with earnest prayer.

INSPIRATION CURE.—The various reports, heard in India, of obstinate cases of dyspepsia with colic and other troubles, to have been cured by the sufferer repairing to some well known temple, staying there in fast and prayer for some days, expecting the favour of the deity, and at last getting a mandate in his favour, are not to be ridiculed. It is more than an autosuggestion that they get. It is an inspiration, a Divine infusion into the mind, a short visit of the Divinity that lies in all human beings, usually as an invisible and imperceptible witness of our thoughts and deeds, but is moved by the pure life, fasting and earnest prayer of a sufferer, manifests itself for a few seconds, shows him the way out of his difficulty and disappears.

HYPNOTIC SUGGESTION CURE.—The patient usually a sufferer of neurotic dyspepsia, sits on a chair or on the bed, and an operator standing before him orders him to think of nothing and sleep; telling him he shall fall asleep in 5 or 10 minutes,

*St. Luke XVII (6).

†Bhagabad Geeta XV (14).

or orders him to hear nothing but the tick of a clock or to gaze at some bright object, or look steadfastly at the eyes of the operator. Or he is put to sleep by the operator passing his hands vertically up and down in front of his face. In India self hypnotization is induced by the person staring into the space above his head, sitting erect, cross-legged, with head turned upwards, hands placed on knees and the body perfectly motionless. Hypnotism is not perfect sleep, but a diminution of consciousness, a condition midway between the sleeping and the waking states, in which the patient retains the power of hearing, but having no control over his mind, as in a dream, can be made to believe anything spoken to him. When the subject of neurotic dyspepsia falls into this half sleeping, half waking condition, the operator asserts 'you have no more pains,' 'your vomiting is cured' 'your appetite is very good.' These assertions have a curative effect upon him when he wakes up.

"Hypnotic suggestion" says Dr. Hale White "have been frequently used in Nancy for the cure of dyspepsia. The neurotic variety yields most readily. Severe gastric pain, certain forms of neurotic vomiting and diarrhoea are also much benefited."

(B.) MASSAGE CURE.

Shampooing or rubbing.

INSTINCTIVE AND ANCIENT.—Rubbing is an instinctive treatment. Animals roll on the ground, and scratch themselves with the paw or hoof for the relief of pain. The child when hurt, rubs the part and feels better. The patient with colic rolls on bed or ground and rubs the abdomen to get rid of pain. Massage was practised in ancient India, though latterly it became shrouded in mystic incantations and magical symbols. It is still a valuable remedy. In country places, away from medical aid, we still see the itinerant man or woman with a bag and bottles of oil crying in the village road "I cure gout and pains." And the village wise man, expels the evil spirit out of a young woman in hysteric fits, more by rubbing and slapping than by his incantations.

VALUABLE IN DYSPEPSIA.—The value of rubbing in acute dyspepsia has been described in chapter III. In the chronic disease, for the relief of headache, giddiness, sense of fulness in head, for face ache, ophthalmia, ear ache, and cold in the head with running at the nose, the patient should rub his own neck from above downwards with the hand smeared with mustard oil, or some one else should do it for him, if he is too weak.

AS A TONIC.—Shampooing the body of their customers, which barbers in many provinces of India still practise, after hair-cutting and shaving, is much appreciated. It makes the customer ready for his bath, is a tonic to the whole system, and increases appetite. In many countries the shampooing is done after the bath.

OIL RUBBING.—Rubbing the body with oil before a bath is a time honoured Indian practice in Bengal and some other provinces, and is a tonic and stimulating embrocation for the cure of dyspeptic skin diseases and other disorders. From 2 to 4 drams of the oil of mustard, cocoanut or sesamum, scented or not, is rubbed from head to foot with force sufficient to produce a rapid absorption. What remains on the skin is removed by the bathing towel, while the patient is in the bath. In some parts of the country the oil rubbing is done after the bath. To be efficacious, it should be done $\frac{1}{2}$ hour before the bath.

IN ATONIC AND OTHER DYSPEPSIAS.—The patient lies on his back, with thighs and legs drawn up. The operator reaches the part to be rubbed by putting the fingers, about 2 inches below the left ribs, in front. By gently kneading the stomach he dislodges the tenacious mucus, gives tone to the stomach, and increases gastric secretion. The patient may do it himself.

IN DILATATION OF STOMACH.—Patient lies as above, with hips raised above the level of the body by putting a pillow under the buttocks, and legs and thighs flexed on abdomen. An attendant now grasps the stomach, gives it a thorough kneading for 5 to 10 minutes about 3 times a week, or the patient kneels down first, then falls on his elbows and chest. The attendant now grasps the stomach and pushes it from left to right thus forcing the lingering food to clear out of the organ into the duodenum.

IN CONSTIPATION.—The massage is either vibratory or made by an attendant smearing his hand with oil or by the patient himself. The sufferer of chronic constipation often instinctively grasps his abdomen and forces the fœcal matter out. The pressure should commence on the right side of the navel, proceed upwards cross the abdomen and finally go down to the left side.

CAUTION.—Massage should always be done, on the bare skin ; never in acute dyspepsia nor in gastric ulcer. If rubbing be pleasing it does good, if painful it will do harm. It should be done for aches and pains, also for rubbing after exercise and before or after a bath.

(C.) THE ELECTRIC CURE

CONSTIPATION.—The most successful treatment of chronic constipation is believed by many, to consist in electric currents. When purgatives

and enemata fail to produce a daily evacuation, the sufferer receives a signal benefit from electricity. Every other morning, before breakfast, the poles of a Faradic instrument are made to play upon the patient's abdomen, for 5 to 10 minutes. One pole is placed on some part of the abdomen or back, and the other passed from the right lower side upwards, then cross-wise, below the liver towards the left side. This electrode should be deeply pressed as it proceeds, so as to give the largest amount of current to the intestines. The treatment is to be repeated every other day at first, and then at intervals of 2 or 3 days.

IN DYSPEPSIA.—In atonic dyspepsia and dilatation of stomach, the Faradic current is a good remedy. In neurotic dyspepsia it is of the greatest service.

Chapter VII.

FRUIT, NUT, AND 'PAN' CURE.

(A) THE FRUIT CURE.

HOW FRUITS CURE DYSPEPSIA:—(1) Ripe fruits are good in chronic dyspepsia, because the sour green fruit, becomes soft and sweet when ripe, by the formation of dextrine or glucose, a very easily digestible sugar. We have seen on pages 24 and 92, that by chewing well we convert starchy food into dextrine or grape sugar. But in ripe fruit we get it ready made, fit for immediate digestion ; hence the labour of the stomach and mouth is much saved, both get rest, and dyspepsia is quickly benefited. Eating ripe fruit is like drinking peptonized milk. In the fruit the starch, in the milk the curd is half digested, before entering the mouth.

HOW FRUITS CURE COSTIVENESS:—The acids and sub-acids mixed with the glucose or sugar of fruits when ripening, are good for costiveness. The acids are citric in lemons and oranges, tartaric in grapes and many other fruits, acid tartrates in pompelos, the malic in apples, and the tannic in nearly all fruits, which gives to the steel knife an inky colour when it cuts an unripe fruit. As ripening progresses, the acids are replaced by

sugar. The more ripe the fruit, the less its power on costiveness. Fully ripe fruits are only good for the dyspeptic. When not fully ripe, and there is some acid, they are good for the costive. Over-ripe fruits are not fit to be eaten.

FRUIT EATING IN OLD AGE:—Fruit eating not only prevents and cures dyspepsia and costiveness of old persons, but by keeping the urine alkaline prevents the formation of stone in the bladder.

CAUTION IN FRUIT EATING:—Fruits should not be eaten in acute dyspepsia, nor in the chronic when there is pain, or wind. They are only to be taken in atonic and neurotic dyspepsia and in costiveness. The best time for eating fruits is the morning or after breakfast. "Fruit in the morning is gold, in the evening lead" is a valuable proverb. Over-ripe, and unripe fruits, and fruits out of season, can not excite healthy digestion, and should be avoided. But jams may be taken when ripe fruits are not available.

(B) THE COCOANUT CURE.

Emperor Akbar's Commissioner, reporting on the economic condition of Bengal, described coconut as "two pieces of bread and a cup of sweet water on the top of a tall tree." It is both food and drink for the dyspeptic.

THE WATER:—A glassful of the water of the green fruit, 3 hours after a full meal, is the dyspeptic's ideal drink. It is pure, cool, palatable, refreshing and both prevents and destroys acidity. The water of the ripe fruit, slightly pungent, is sweeter and helps the action of the bowels.

THE KERNEL:—The butter-like soft pulp of the green fruit is a capital food-medicine in bulimia, hiccough, vomiting and acidity. The stiff kernel of the ripe fruit, grated, mixed with boiling syrup, is made into balls or cakes of sweetmeat, a palatable food both in health and dyspepsia. Eaten with roasted rice, (muree) it is a special food for acidity.

THE MILK:—The pressed out juice of the Kernel known as the 'milk of cocoanut' is as white as cow's milk, but is thicker sweeter and has a delicate flavour. It is not only good for acidity but is of value in costiveness, producing an evacuation, by virtue of the oil it contains, in about 3 or 4 hours, as easily as by half the quantity of castor oil. Dr. Shortt reports having "used it successfully in debility, incipient phthisis and cachectic conditions." It has however one drawback as Drs. Garrod and Thomson have shown, namely that "under its prolonged use, it is apt to induce disturbances of the digestive organs" (Waring.) This the writer corroborates, and advises its use to be stopped, as soon as the bowels become

loose, to be cautiously resumed when the diarrhoea is cured.

THE OIL.—The oil if fresh, has a delicate flavour, all its own, and may be used with food like butter, or taken as medicine like codliver oil. It can be easily made, by boiling the milk, and separating the oil when it floats. It is by far the best oil for the dyspeptic's kitchen. Its great drawback is that in Indian climate, it loses its fine aroma in a week or ten days, becomes oxidized, with a large formation of cocinic or cocostearic acid and therefore useless as food, though it still remains good for rubbing on the skin, in dyspeptic skin diseases. Dyspeptics should therefore have it made in small quantities every 4 or 5 days, fill the bottle quite full with the warm oil, and throw away just so much as to leave no space between the oil and the cork tightly put on. Other nuts are walnuts, almonds, and pistachios good in neurotic dyspepsia only.

(C) THE 'PAN' CURE.

HOW PAN IS EATEN.—The leaf of piper-betel is painted with a little slaked lime; a bit about 2 grains of catechu and a few pieces of areca nut are put on it, and the whole folded and chewed. Cardamom seeds, coriander, camphor, aniseed, ajwan and other spices are added for flavour.

WHY GOOD IN DYSPEPSIA.—The following effects are certain (1) A very large quantity of saliva is secreted, when pan is chewed. The alkaline saliva, mixed with the alkaline lime and the alkaline juice of the leaf pours down the œsophagus in successive gulps, and not only helps to convert the starch of vegetables into dextrine, but also destroys the extra acid in acid dyspepsia, (2) the lime itself is an antacid of great value (3) the catechu has the wellknown power of preventing pyrosis and checking diarrhœa. (4) The various carminatives named above, prevent fermentation in the stomach and intestines, wind, acidity and heart burn, and the camphor is good in diarrhœa, if present. (5) The secretion of saliva due to pan chewing is preventive of excessive thirst and too much water drinking, the two great troubles of the dyspeptic in the hot season. (6) Pan-chewing strengthens the gums and gives tone to the mucous membrane of the mouth and stomach. (7) It is an antiseptic and corrects foul breath and sweetens it. K. M. Nad-karni in his "Indian plants and drugs" has shown that the betel leaf contains an aromatic essential oil, which can be isolated, and which on being treated with caustic potash, yields a phenol called "chavicol", a powerful antiseptic five times stonger than carbolic acid. To this betel-phenol is due the characteristic odour of the leaves and oil. "Pan

leaves are therefore used all over the country, as an item of surgical dressing, being handy, cheap, and soothing, and therefore preferable to oiled silk and gutta percha, in treating small wounds. Chewing white pan leaves gives immediate relief to the uncomfortable feeling of bulimia and irritative dyspepsia. (8) It allays vomiting and retching.

INSTINCTIVE USES OF SUBSTITUTES. So instinctive is the desire of mankind to pour down into the stomach an extra quantity of saliva after a full meal, in order to expedite digestion, that races and individuals, not knowing or hating the pan, have a hearty smoke of tobacco after break fast and dinner. This produces so copious a flow of saliva that smokers swallow enough of it, and spit out the spare portion. Those who neither smoke nor chew pan, are often in the habit of chewing pieces of haritaki or areca nut. And those who do not do any of these, and therefore suppose they are singularly free from these habits, still do so unknowingly ; for after every full meal, they keep swallowing a large quantity of extra saliva, without noticing that they are doing so. Sufferers of acid dyspepsia do this more than others, in order to take away the uncomfortable feeling in the stomach caused by the acid. Surely, the laws of nature must be obeyed, whether you like them or not.

AN ALTERNATIVE.—Therefore, since human beings, particularly dyspeptics, must swallow extra saliva, after meals, they must either eat pan or have recourse to some other alternative. A smooth, or better still a rough pebble, may be kept in the mouth for half an hour after the principal meals, so that its movements may excite the flow of saliva enough for a good digestion. This though not as efficacious as pan eating, is still a good substitute. Cardamoms, and other spices may be chewed instead.

CAUTION.—But too much of a good habit is often as bad as a bad habit. Too much pan eating increases dyspepsia, brings on costiveness, gives an ugly appearance to the teeth and lips, and covers the tongue with a red coating which hides its real appearance. Eat the pan in private not in public. One pan after each principal meal i.e. two or three a day is quite enough. The best *sanchi* or white pan, the most aromatic and antiseptic of all varieties, if available should be selected. Those who are afraid of the blood-red colour, should gargle the mouth, wipe away the colour of the lips, and rub the teeth with tooth powder No. 1 on page 20, after eating pan, before going out in public. The trouble taken will be repaid by the benefit to dyspepsia, the sweetness of breath, and the pleasure of eating. Only the juice should be swallowed, the

refuse is to be thrown out. Only the fully formed, not the new leaves, should be eaten. The midrib should be thrown away in preparing the pan for eating.

WHO SHOULD NOT EAT PAN.—Bhavaprakash advises that persons suffering from disease of teeth, or eyes, epilepsy, alcoholism, hæmoptysis, and phthisis should not eat pan. Persons suffering from gravel or stone in the bladder, and those who notice deposits like brick dust in their urine if they eat pan, should use little or no lime with it. Because lime combines with the oxalic acid of the vegetables we eat, and forms calculus or gravel.

Chapter VIII.

EXERCISE OR LABOUR CURE.

LABOUR WHY GOOD.—Nature's law is : 'Labour much, eat much ; labour little, eat little, in other words, as the labour so the hunger ; as the hunger, so the digestion : as the digestion, so must be the ration. If ration be more than labour requires, it causes dyspepsia of repletion ; if less, that of starvation. You must eat exactly the quantity your hunger wants ;—neither more nor less. The infant flourishes its four limbs, the new born kid or calf runs and jumps, and children play, run, jump and make noise, to get hungry, and thus obey this command. Dyspepsia is loss of hunger and digestion. Get them back by labour. You must either earn your bread by the sweat of your brow, or if you have the bread at home, sweat your brow to earn your hunger and digest the bread.

IT IS AN INFALLIBLE REMEDY.—Of the six best medicines for dyspepsia, enumerated on page 92, five can be obtained by exercise alone. Therefore it may be called a specific remedy for this disease. Let us see how it acts :—

HOW EXERCISE CURES DYSPEPSIA.—Labour increases the force and frequency of breathing.

The forcible inspiration draws more air and oxygen into the lungs, than when we are at rest. This extra oxygen purifies the blood better and combines with more waste matters of the body. These are forcibly thrown out by the more powerful expiration. Sweat and urine pass out more freely. The greater loss of solids and liquids in this way, causes a better house-cleaning of the body, and greater demand for food and drink. These demands are called hunger and thirst. (2nd) By labour or exercise, the liver is pressed and compelled to send out more bile than when we are idle. This increased bile supply, makes better digestion, better purification of blood, and better clearing out of the bowels. (3rd) The pancreas being compressed its secretion is increased and thus supplements the action, of digestion (4th) By the movements of the breast and abdomen, the stomach and intestines are forcibly compressed, so that gastric juice and intestinal secretions are increased and the food eaten is pushed on its downward march. This results in quicker digestion and thorough cleaning out of bowels (5th) Dr. Haig has shown that exercise throws out of the body a large quantity of uric acid and thus prevents and cures rheumatism* Any one who on rising in the morning with painful limbs, finds relief by walking and

* Haig, Diet and Food in relation to Power of Endurance. London, 1906.

other exercises, will acknowledge the truth of this.
 (6th) Exercise daily performed hardens the body makes it less liable to dyspepsia gout, rheumatism, cold and cough, as is seen in our day laborers.
 (7th) It increases the power of digesting more water
 (8th) Increases Will Power, by concentrating the attention on the exercise.

EXERCISES FOR THE CURE OF DYSPEPSIA.

1. WALKING.—For too stout, or too thin persons, for weak, anæmic or elderly invalids and for dyspeptics with disease of the heart or lungs walking is the most appropriate exercise. Open fields, river side or sea side should be chosen, when available, for this purpose. The invalid should walk slowly and return home before a feeling of fatigue supervenes. As strength returns, the speed and length of the walk may be increased. When unable to go out, he should practise it at home. For dyspeptics from 50 to 70 years of age, a glass of water early in the morning then a walk of three miles is as good as an opening medicine, as it clears the bowels and gives appetite. Such patients should not walk fast or run, for fear of rupturing a blood vessel. Walking exercise is good for gouty invalids. Some dyspeptics can walk four or five miles a day. This should be divided in two instalments, morning and evening.

2. CARRIAGE OR MOTOR DRIVING.—This is passive exercise, fit for persons too weak to walk. For persons over 70, this exercise and walking are the best.

3. BOATING AND ROWING —Sailing in a boat, or steamer is a pleasant, passive exercise, tonic and invigorating to the whole body. Rowing is active exercise. It expands the chest, and by alternately contracting and relaxing the digestive organs, acts as a powerful digestive tonic. It is of great efficacy in costiveness, and torpidity of liver.

4. RIDING AND CYCLING.—“Riding” says Sydenham “cures consumption as surely as bark cures ague.” It certainly does good in dyspepsia attending phthisis. It is a tonic and stimulant to the system. Cycling is so in a minor degree.

5. WALKING-STICK EXERCISE.—Hold the ends of the stick in your hands, and step-over it, first with one leg, then with the other. Do this 50 times. Good for torpid liver, atony of stomach, and constipation.

6. FOOTBALL, GYMNASTICS, LAWN TENNIS, CRICKET, AND RUNNING, are good for young persons in their adolescence. These help growth and development and give keen hunger. Elderly persons, when convalescing, may play lawn tennis and cricket, but should never attempt gymnastics or running.

7. **MUSCLE CONTRACTION.**—Sandow, the great authority on the subject of strength, gives a remarkable advice, thus:—"When you are sitting down reading, practise contracting your muscles. Do this every time you are sitting down leisurely, and by contracting them harder and harder each time, you will find that it will have the same effect as the use of dumb-bells or any more vigorous form of exercise". "It is perhaps more valuable, owing to the fact that it improves the will power, and helps to establish that connection between the brain and the muscles which is the basis of strength and "condition". "It is desirable to exercise before a looking glass, for then the movements of the various muscles can be followed". "And to see the muscles at work and to mark their steady development, is itself a help and a pleasure".

8 **SANDOW'S DUMB-BELLS** have the following advantages (a) "Whether he will or no, the pupil must grip the bells hard, and as the strength of the springs is known, he can regulate his progress to a nicety as he grows stronger, (b) however pre-occupied and worried the pupil may be, he has a definite point upon which to concentrate his mind. He must exert a certain amount of force in gripping the bells, to keep the two halves together, and consequently must put out a certain amount of will power"* The grip bell is of great benefit to dyspeptic women.

* "Strength and How to Obtain it," by Eugen Sandow, London Gale and Plodder Ltd.

9. **ORDINARY DUMB-BELLS.**—These may be used when Sandow's are not available. They should not be heavier than 2 lb each, for the dyspeptic. Heavier bells and Indian clubs may be used when strength allows.

10. **IMITATING THE DANCING GIRL.**—Put right hand on right waist and left hand on the left, with space between thumb and index finger of both hands for supporting the two sides. Then like a dancing girl, let the whole upper part of the body go round and round. It stimulates the digestive organs, prevents and cures dizziness.

11. **IMITATING THE HEWER OF WOOD AND DRAWER OF WATER.**—Stand, set the legs slightly apart, hold up the arms high, suddenly bring them down and stoop, as if to cleave asunder a large log of wood. Repeat it 50 times. For imitating water lifting, take two dumb-bells in the hands, stand, stoop as if you were looking into a well. Lift up right and left arm and fore arm alternately as if you were raising a heavy jar of water ; repeat 50 times. Good for costiveness.

12. **GARDENING.**—Measure out a small piece of land, say 20 x 20 feet, square. Fence, weed, dig ; manure, sow or plant, water, and prune with your own hands, taking if need be, an occasional help of your servant. How delightful will it be when you see the sprouts coming out, or the plants taking

root and flowering. And when the time comes, you gather the ripe fruits, send a present of some to a friend whom you have not seen for some months, stating you have grown the fruits with your own labour.—He regards them as worth many times more than their real price, and when he comes to see you, he exclaims why Hem, I am sure you have no more dyspepsia, you look five years younger !

13. CARPENTRY is just as interesting, profitable and curative, To see a desk, table, a chair or a chest of drawers gradually coming up to its proper shape and size, with your own hands, using your own instruments, gives both pleasure and health. And when the article is varnished and finished, it stands in your drawing room, a delightful witness to the power of labour in curing disease.

14. SITTING EXERCISE, THE POSTURE OF ATTENTION. Sitting upright, straight as a rod, and stiff as a rock, is good for dyspeptics in the following ways :—(1) It is the effect of will power. Though easy to do it now and then, it is difficult to make it a habit. For when you sit erect, you must exert yourself to remain in that attitude. As soon as you are absent-minded, the whole upper part of the body falls down into a curve. Therefore, the will power must be on the alert to keep you straight, (2) It causes and increases

will power, by producing a tension of the muscles of the front and back, and thereby compelling the mind for the time being to be present, where the body is, in an attitude of obedience to the mandates of the will (3) It gives the stomach, the heart, the lungs, greater space to work in, and so brings about better digestion, circulation and respiration. The muscle stretching does the same good as muscle contraction (4) It helps deep breathing. This exercise besides being valuable in the cure of dyspepsia, is so powerful in invigorating the will power, that many of our greatest men and women in the past owed their success to it,

15. THE DEEP-BREATH EXERCISE. The habit of sitting erect enables the patient to practise deep breath exercise, by expanding the chest. It may also be practised standing, walking or lying on the back. All you have to do, is to take slow deep breath and pay no heed to its retention and expiration, which will take care of themselves. The best time to do it at first, is the morning, during the morning walk, when it is done most easily. By and by, the position of sitting erect will be found most convenient. You take deep breath, retain it for a few seconds and then slowly breathe the air out. It should be done for 5 minutes at first, then gradually increased to half an hour, two or three times a day.

WHAT IT IS GOOD FOR (1) It purifies the blood, better and warms up the body more completely than ordinary breathing (2) It clears out the waste products of the body better, by the more vigorous expiration (3) The white blood cells are converted into red cells more briskly, which means that the last portion of digestion, which is accomplished in the lungs, is completed more quickly and satisfactorily (4) We ordinarily use only one third of our lungs in breathing. The other two thirds remain, unused, uncleared, the hot bed of disease. The apices of the lungs are therefore the first to be attacked by disease. By taking deep breath, these unventilated lung tubes, specially the top portions, become thoroughly cleaned and washed out by the pure oxygen, which kills and sweeps out the bacilli of that terrible disease phthisis, so often accompanying dyspepsia. It is thus a preventive and curative remedy for it. The air breathed in, acts as a food and curative drug, while the expired air plays the part of a scavenger. The Indian aphorism "The deeper a man breathes, the longer he lives" is thus founded on physiological truth.

CAUTION. The best time for exercise is early morning, fasting, the best place the open air. Cheerful temper during exercise and attentive mind are necessary. Do not breathe through the mouth. Do not eat or bathe immediately after,

Chapter IX.

WATER CURE AND MILK CURE.

(A) HYDROPATHY OR WATER CURE.

BATH. In chronic dyspepsia, a bath is cleansing, refreshing and soothing. It increases appetite, hastens digestion, and is a tonic to the whole system. The patient feels cheerful and his mental powers and bodily vigour increase.

WARM AND COLD BATHS. A five minutes' warm bath is good for a weak patient, if taken with doors and windows closed. (p 85). With increase of strength, a cold bath, a shower or a plunge bath may be taken, about 2 hours before, or 4 hours after breakfast. If either of the two proves too strong for the patient, he may have at first a sponge bath every other day, in order to invigorate him for the more powerful baths.

RIVER BATH. From April to September, a river bath is a tonic and digestive exercise, if taken in the morning, and not protracted beyond five minutes; the river being left before chilliness is felt. The writer is personally aware of its great value in protracted vertigo, which resisted all other remedies,

SEA BATHING is good in nervous dyspepsia, and liver disorder. To bathe in the uproarious seas of Bengal and Orissa, 3 points should be attended to (1) To stand firmly, at right angles to the sea, so that an incoming wave is unable to throw you down, but is divided in two halves, one passing before, the other behind you, (2) Not to dip your head, but either to stand firmly as above, or jump up on the top of each incoming or out going wave, thus thwarting its attempt to drag you up or down. (3) "Whatever you do, never attempt to sit or squat on your legs, for the sea is a hero, and hates such crouching, and will surely roll you on like a billiard ball, towards the shore, and give you a drink of his salt water, if he finds you in such a cowardly position."* Sea bathing sometimes produces diarrhoea and increases dyspepsia.

ICE, ICE WATER, COLD WATER. Sucking ice, or drinking ice water, is good in acid and bilious vomiting, blood vomiting from gastric ulcer, and hiccough. In no other condition should ice or ice water be taken by the dyspeptic. Do not eat or drink anything very cold or very hot if you want a healthy stomach. For cold water drinking see pages 41, 49, 84.

MINERAL WATERS. The water of the wells of Bhuvaneswar in Orissa, containing carbonate of

* Author's Book on Puri p. 27.

lime, is good for drinking in acidity. In Benares the water of the well Goibee is good for acidity and that of Bridhkaleswar for costiveness. The water of the Sapper-miner spring of Kasauli is a stomachic tonic and that of Sitakund, in Monghyr, a general tonic. Of imported waters, Apolinaris and Marienbad containing carbonic acid, soothe irritable stomach. Vichy with bicarbonate and chloride of sodium, is good for acidity, uric acid gravel, gout and rheumatism. Carlsbad and Hunyadijanos containing soda and magnesium sulphate, are good for costiveness.

COLD AND HOT COMPRESS. For overcoming the constipation of dyspepsia, a piece of flannel wetted with cold water, is spread on the abdomen, covered over with 2 or 3 layers of dry flannel and the whole fastened with safety pins, and kept for some hours every day. The over-lapping flannels, hinder the entrance of air, prevent chilling of abdomen, causes a flow of blood to its surface, removes sensation of cold, and produces a feeling of comfort and warmth. A towel soaked in cold or ice water, squeezed and quickly spread over the left side of the abdomen below the ribs, prevents vomiting in acute irritative dyspepsia (For Hot water compress or fomentation see p. 45).

GOOD DRINKING WATER. (A) TESTING.
Add 2 or 3 drops of Condyl's fluid to a tumblerful

of the water to be examined, just enough to give it a pink colour. If the water quickly becomes brown, or in 24 hours loses its colour entirely, it is unfit for drinking. (B) FILTRATION. For filtering drinking water, the Pasteur filter is the best. When this is not available, the wooden or bamboo-frame filters on which jugs, filled with charcoal and sand, stand one upon the other, and the water allowed to dribble down into an empty jug, should be used. The sand and charcoal should be washed and dried in the sun, and the jugs cleaned thrice a month. Throwing down mud and other impurities of the water, either with alum, or a little solution of the rubbed seed of *strychnos potatorum* is an easy process. It makes the dirtiest water clean as crystal, But to be absolutely safe, all drinking water, even the filtered tap water of cities must be boiled. The water should not only be warmed, it should be made to simmer, froth, bubble, crackle and jump with noise, before it becomes safe enough for drinking; specially in country places, where contaminated water often passes for drinking water. For keeping it in, the tall-necked earthen *Soorai*, though it makes the water delightfully cool, is not a safe vessel, as it is difficult to clean its inside. A wide mouthed earthen jug or jar with a well fitting cover, is better. The boiled water should be poured from a height of 2 or 3

feet to mix air with it, and give it a taste. A pinch of camphor or a few drops of spirit of camphor to a gallon of water is a safe addition.

FOOT BATH. For the relief of headache, vertigo noises in the ear, and sleeplessness due to dyspepsia, a foot bath in half a bucket of hot water, with a handful of mustard powder dissolved in it, is a splendid remedy. The feet should be dipped, up to a few inches below the knees, kept for 15 to 20 minutes in the water, as hot as can be borne, then taken out, wiped dry, and put in stockings. The patient should remain in bed for at least half an hour after the foot bath. It is best done at bed time.

(B) THE MILK CURE.

WHY INDIGESTIBLE IN ACUTE STAGE.—In acute irritative, and duodenal dyspepsia, milk if taken, curdles up, forms hard lumps of casein or cheese, and is either vomited up, as in the case of infants, or passes down into the intestines, sets up acute pains, becomes decomposed, produces foul smelling gases, and passes out in diarrhœa. In atonic and intestinal dyspepsia in which little acid is present, the milk glides down into the intestines when taken in empty stomach, and passes out in diarrhœa without much change. Indeed with many such patients a glass of warm milk acts as a purgative. In the former it is over-coagulation;

in the latter, under coagulation that produces indigestion. Only the normal gastric juice seems able to peptonize and digest milk ; the abnormal is absolutely incompetent (See p. 28 and 30)

HOW IT MAY BE MADE DIGESTIBLE.—But when the acute stage of the disease is over, milk may be made digestible in various ways, thus :—

(1) **AS MILK AND SODA WATER.** Boiled milk should be cooled before mixing it with soda water, as it curdles up if mixed hot. Mixed in the proportion of half and half of each, kept in a glass and occasionally drunk in sips, such milk is easily digested.

(2) **WITH LIME WATER**—Prepare lime water as directed on page 42. Mix three ounces of it with twelve ounces of milk. This mixture is a soothing drink, in chronic dyspepsia, gastralgia or colic, cancer of the stomach and vomiting. It checks the excessive acidity in irritative dyspepsia. This drink is also good in making the urine alkaline when it is excessively acid, and as such, dissolves uric acid gravel and calculi (3) **MILK MIXED** with a decoction of pearl barley is a soothing drink in chronic irritative dyspepsia ; boiled with arrow-root it is a good food in dysentery and diarrhœa ; with sago it is the most ordinary diet in fevers and with soojee in constipation. (4) **TAKEN WITH RICE,** milk is more easily digested than if it is drunk alone.

It appears that the gastric juice is able to act better on the soft mass made of rice and milk, than on the pure milk, which it finds difficult to coagulate. This is the secret of the 'Rice and milk' cure of dyspepsia, in which all other foods are excluded and only rice and milk with sugar is allowed, thrice daily. This also explains why some patients can digest thick milk more easily than milk diluted with water. (5) AS PANADA OR PANADO. If bread be boiled in water, and milk and sugar added afterwards, it becomes as digestible as the above.

(6) MILK ALONE.—A diet of milk alone to the exclusion of all other things is an imitation of the diet of the infant and can only be successful if the imitation be as complete as possible for a grown up person. Thus, it should be taken in small quantities, about eight fluid ounces, at a time ; twice or thrice daily at first, gradually increasing to 5 or 6 times a day, as appetite increases. The milk should be taken in tablespoonful doses, kept in the mouth for a few seconds, during which it is moved up and down, in imitation of the baby, then swallowed. And as the infant sucks the warm milk of its mother, without boiling it, so should the patient, drink, as often as possible, fresh milk, shortly after the cow has been milked. If digestion is very weak, the milk should be mixed with warm water and made as thin as human milk. When it is inconvenient to get fresh milk

as often as wanted, boiled milk should be used instead. Taken thus, the milk is good in gastric and duodenal ulcer. In nervous anorexia and neurotic dyspepsia, 2 to 3 pints of fresh milk may be taken a day.

SEPARATION OF MILK CONSTITUENTS :—

(7) CASEIN, The ingredients of milk are five in number. viz. casein or caseine (channa), 2, butter, 3, sugar, 4, soluble salts as chlorides and phosphates of potash and soda and insoluble salts as phosphates of lime, magnesia, and oxide of iron ; and 5, water. Of these, casein is obtained by adding some acid to boiling milk. The water that separates is called whey. It shows the large quantity of water, the purest of pure milk contains, namely $87\frac{1}{2}$ parts of water in every 100 parts of cow's milk. In preparing casein for the dyspeptic the whey should not be strained out entirely, but enough should be retained to make the casein a doughy soft mass, which if eaten with sugar is easily digested. This is one of the best means of solving the problem of milk digestion in atonic dyspepsia. For the casein being half digested milk does not require much acid help in the stomach. And if it does, it is supplied by the gastric juice, which the sugar compels to be secreted.

(8) SANDESH AND RASAGOLLA, are two preparations of casein, which on account of their softness, flavour, nice taste and easy digestibility,

are well adapted at dessert in chronic atonic dyspepsia if taken in moderate quantity. Sandesh is made by mixing casein with hot syrup, stirring it with a ladle, reducing it to a doughy, semi solid condition, adding flavouring things, and moulding in fancy shapes and forms in small wooden blocks. Rasagollas are balls of casein with a few grains of cardamom and several drops of rose water put inside each, and cooked in boiling syrup.

(9) WHEY is a valuable drink in acid dyspepsia, gastric and duodenal ulcer, diarrhœa, dysentery, infantile dyspepsia with vomiting of curdled milk, and most fevers. In all cases where pure milk can not be digested, whey is an excellent substitute ; for it contains the sugar, the valuable salts of milk mentioned above, a slight quantity of butter and casein, and nearly all the water of the milk. If whey disagrees, strain out the little butter and casein it contains through thick cloth, Taken every day whey cures costiveness.

(10) BUTTER MILK.—Next to whey is butter milk in this disease. Butter milk is the milk which remains after the butter is separated from it. But the TAKRA or *ghola*, the Indian koumiss is prepared from curdled milk, or from a day to three days old mixture of cream and milk from which the butter is separated by churning. What remains is TAKRA or butter milk turned acid by the development of lactic acid. It is richer than whey,

as it contains the casein and is more palatable on account of the acid. Bhavaprakash prescribes it in flatulent and atonic dyspepsia, anorexia, piles, diarrhoea, weakness of heart and colic, and advises it to be taken with "asafoetida cumin seeds and salt". Thus taken, "it becomes," he says "Appetizing, tonic and strengthening". He adds "In the cold season, in loss of appetite, in wind in the intestines, or when the natural flow of secretions is impeded, butter milk acts as nectar". One European writer, Krukenberg also speaks very highly of it. Says he, "When the patient is hungry let him eat butter milk, and when he is thirsty let him drink butter milk." Indian butter milk mixed with sugar, very much resembles English Koumiss.

(11) CURDLED MILK (Dadhi or Dahi) is the milk curdled or coagulated, whole and entire, by the addition of a little stale curdled milk or vegetable acid, into milk boiled and kept slightly warm. Allowed to remain for a day or two, it develops a large amount of lactic acid and becomes sour. Taken at the end of a meal it is good in atonic and intestinal dyspepsia, diarrhoea and dysentery. Prof. Metschnikoff believes, it destroys intestinal microbes and prolongs life. It is very bad in acid dyspepsia. It should be taken mixed, with honey or sugar, and never at night.

(12) ARTIFICIAL HUMAN MILK. In the dyspepsia and diarrhoea of infants, if the mother's milk

disagree, cow's milk should be "humanized" or made like mother's milk and given to the child. Take a pint of skim milk, or milk freed from its cream. Make whey by adding lemon juice or other acid, strain the casein out. Now boil the whey quickly. Take 7 ounces of this whey and mix 2 drams of sugar. When cold, add 13 or 14 ounces of new milk, a teaspoonful of cream, and stir well. When the mother is suffering from acidity, liver complaint, diarrhœa, dysentery or fever, this milk should be given to the infant to prevent and cure its dyspepsia, warming it every time before giving it to the child.

(13) PEPTONIZED MILK. This is milk half digested outside the body, and therefore well suited to the dyspeptic.

The directions for peptonizing the milk are given with the boxes of peptonizing powders.

CHAPTER X.

THE CLIMATIC CURE.

FROM TOWN TO THE COUNTRY.—City dyspeptics often derive great benefit by retiring to the country, where the easier conditions of life and the quieter surroundings produce an immediate good effect.

FROM MOIST TO DRY.—When the air is full of moisture, as in the rainy season, digestion becomes poor, but in autumn and spring it improves, with the majority of people. The dyspeptics of Assam, Bengal, Orissa and Madras, where the atmosphere is moist, begin to eat and digest better when they migrate to the slightly drier provinces of Behar, Central Provinces and Mysore.

FROM LOW TO HIGH LAND.—And as the invalid goes more and more towards the United Provinces, Rajputana and Punjab, the altitude becomes higher and higher, and the atmosphere more and more dry, so that he finds fever, dyspepsia and chest complaints perceptibly diminishing as he advances from Behar to U. P. from U. P. to Punjab and from Punjab to the frontier Province. The severity of both the cold and hot seasons, and the dryness of the atmosphere, contribute to the

healthiness of these places. It is a known fact that these provinces are so far ahead in point of healthiness, that for ages the invalids of the southern and eastern provinces have received remarkable benefit by resorting to them for the cure of fever, dyspepsia, diarrhœa and dysentery. The stalwart appearance of the people in Punjab, the frontier provinces, and many parts of Rajputana, and their high digestive power, are living evidences of the healthiness of these places.

WHERE EXTREMES MEET.—On page 10 has been described the good effects of cold on digestion. This is seen in our mountain climates. But even in the plains of India, Burma, and Ceylon, the winter is the time of good digestion. For then we require more heat to preserve our life, for which we breathe the cold condensed air containing more oxygen, which demands more carbon to make a bigger fire in our body to keep it warm, than in the hot season. This carbon is supplied by the larger amount of food eaten. Hence cold is a help to good digestion.

But the other extreme, namely intense heat has a similar effect. In all the upper provinces, viz the United Provinces, Punjab, Rajputana, Central Provinces and Central India, in the months of May and June, when the thermometer registers a temperature of 110 to 115 or 120°F in the shade in the middle of the day, and thousands of the

richer people run up to the mountains or down to the sea-coasts to avoid the heat, disease in these super-heated provinces is at its lowest ebb. Plague, cholera, small pox, fever and dyspepsia disappear, and the residents amidst the terrible heat, though they suffer from prickly heat and mango boils, eat, digest and sleep very well. These places are therefore good for the dyspeptic from November to January the three coldest, and May and June the two hottest months. He should select the time according to the peculiarities of his constitution. Truly extremes meet in these places.

UP, ON THE MOUNTAINS.—Darjeeling with its Jalapahar 8000 feet high, is the most salubrious of the North East Himalyan Sanatoria, and is remarkably free from bill diarrhoea. Shillong the hill capital of Assam, is also a good place for the dyspeptic. But Naini Tal elevation 6409 ft. in the U. P. is better, and Kasauli in Punjab 6322 ft. is the best. "Simla for gayety, Kasauli for health" is still the opinion of many sanitarians. Kashmir "the heaven on earth"—will rejuvenate an old dyspeptic of Calcutta or Bombay, if he can forget his money hunting for 3 months, and stay there for that short period. Dehradun 2369 ft. Landour 7459, Mussoorie 7433 and Dalhousie 7687 ft. are also good places for the dyspeptic in summer. Mahabaleswar in Bombay, Abu in Rajputana, Panchmari in the Central provinces and Ranchi

in Behar are also good summer resorts for the chronic dyspeptic, when judiciously selected.

In Southern India, the Nilgherries "The Queen of Indian Sanatoria," are by far the best health resorts for the dyspeptic. There are four Sanatoria in the Nilgherry hills. Ootacamund, Coonoor, Wellington and Kotagiri. The climate of Coonoor is mild and warm, that of Ootacamund is cooler. Kotagiri and Wellington have pleasant and congenial climate. During the winter and hot seasons, these places are well suited to the dyspeptic, the malarious and the neurasthenic patient.

DOWN, ON THE LOWER PLAINS.—Bhuvaneswar in Orissa is the best place for acidity. Diamond Harbour near Calcutta, is good for malaria and indigestion. Here the city dyspeptic may spend his week-ends and holidays, if unable to go to a distance. It has an unusually seaside appearance owing to the great breadth of the river, which offers a splendid opportunity for rowing, as its strand for walking exercise. In the coal districts Madhupur, Deoghur, Dhanbad, Sitarampur and Hazaribagh are good places for the chronic dyspepsia. So are the coal fields of Central Provinces.

ON RIVERS.—A river trip on the Irawady or Ganges for 6 weeks is to a Burman or Indian dyspeptic, like a specific drug. The purity of air, the

variety of scenery and freedom from anxiety combine to effect a quick cure. The Nerbudda and the Godavari afford to the South Indian patient, numerous places of interest where he can make short stays. The busy dyspeptic can have short trips on steamers which do immense good to digestion.

SEA-VOYAGE. has a curious way of curing dyspepsia. At first it gives a good shaking to the digestive organs. Then comes violent sea-sickness. The liver, stomach and intestines are squeezed out as it were, and compelled to disgorge all the dirt and filth they had accumulated in their storehouse, for years. The whole digestive system is over-hauled, swept, brushed and washed,—all the better, if washed by an occasional drink of sea water. Now comes 'fast' the great dyspepsia-curer to complete the treatment. The whole Augean stable is cleaned, and dyspepsia is dismissed with disgrace. Then the pure, ozonized sea air, brings back on its wings the lost digestive power, and a new lease of life for the patient. Thereafter, the digestion improves daily. For as the ship progresses, her onward motion, gives the whole body of the patient a constant passive exercise, whetting up the appetite, and her swinging motion helps that swinging action of the stomach, described on page 29, so essential to good digestion. Truly does Dr. Halewhite say "There are many

Cases of dyspepsia which resist all treatment save a long sea voyage". A voyage from Calcutta or Madras to Singapur or even Hongkong or from Karachi, Bombay or Colombo to Rangoon and back generally effects a cure. A longer Voyage viz to Japan or Europe is the very best.

Chapter XI.

CONSTIPATION OR COSTIVENESS.

CAUSES. Very often the causes of constipation are too digestible food, too little water and too little labour. Chronic dyspepsia, neurotic dyspepsia, alcohol habit, opium eating, tea dyspepsia, often produce it. Drinking too little water, or losing too much water, as by perspiration in summer, by evaporation in fever, by urination in diabetes or in the cold season, always brings it about. An exclusively meat diet, or a diet with too little vegetables, excessive labour or idleness, belts stays and waist bands, are also responsible for it. Defective action of the liver, want of tone of the intestine with loss of secretion and power of contraction, anæmia, starvation, and severe anxiety are potent causes.

NOT ALWAYS A DISEASE. Diarrhœa is a disease, for it is due to indigestion. But constipation, its opposite, is not a disease, if due to complete digestion. With athletes, constipation and hard motion, are signs of health and vigour. With those who labour hard, as noted on page 93, it is evidence of good digestion. With ascetics it is proof of fasting and self restraint, and with infants a sign of good digestion of milk. Many

elderly persons in good health are known to have been costive from childhood. A gentleman, who was the writer's teacher over half a century ago, is now nearly 80 years old, but so healthy that he looks not more than 60, relieves his bowels about once a week. Sir L. Brunton mentions the case of young woman, who on being asked if her bowels were regular, answered "yes sir". Asked again "How often are they open?" she replied "once in three weeks, sir".

WHEN TO BE REGARDED AS A DISORDER. But with the majority of mankind, a daily action of the bowels is a necessary condition of health. Costiveness is both a cause and an effect of dyspepsia, and its removal an important item of the dyspeptic's treatment. Costiveness is a forerunner of many diseases. It causes irritability of temper, a tired feeling, nervous exhaustion, palpitation, and in women is the cause of hysteria, hypochondriasis, melancholy thoughts and noises in the ears. In most kinds of fever, it is due to drying up of intestinal secretions. The disease may be divided into 3 classes, simple, habitual and chronic constipation.

(A) SIMPLE CONSTIPATION.

Simple constipation is due to fevers, fasts, liver disorders, sluggish action of the intestines, or too digestible food which leaves no residue to be expelled. In these cases, the intestinal secretions

dry up, the food passes downwards very slowly, and therefore the fæcal matter that forms takes 3 or 4 days to reach the lowest part of the bowel, the sigmoid flexure, or the rectum. And when it reaches there, it remains lodged like a cylinder, as thick as a walking stick, and 3 to 6 inches long, which fails to excite the stimulus necessary for defæcation. More often, this hard mass is broken higher up in the intestines into pieces, which as they slowly roll down the winding canal, have their angles smoothed, and assume the size and form of balls, like the dung of the horse and goat, and called scybela.

TREATMENT.—When due to want of liquid, a glass of warm water or cold water as advised in the previous chapters or a glass of warm milk on empty stomach is sufficient to produce an evacuation. In fevers, the best thing is a dose of castor oil, as advised in chapter III for acute dyspepsia, When the tongue is dry and thirst insatiable, two drams of sulphate of magnesia, and two drams of sulphate of soda in an ounce of peppermint water, will produce a copious evacuation in a full grown person. Half this dose is sufficient for a boy or girl, and one fourth for a child 6 years old. When due to eating too soft food, brown bread, vegetable foods, and ripe fruits should be eaten to procure a daily evacuation. If due to sedentary habits and a sluggish liver, recourse should be had

to exercise as detailed in chapter VIII. One of the best remedies for simple constipation is a glass of the sherbet of the ripe Bael fruit and another is an ounce of the milk of cocoanut taken fasting in the morning. Massage of the abdomen is an efficacious simple measure when the bowels have not worked for 3, 4, or more days. But a glycerine suppository, a glycerine enema or a soap water and castor oil enema is the best. The cold compress described in chapter IX is also effective.

(B) HABITUAL CONSTIPATION.

This form of disorder, is not always the result of simple constipation, but often creeps slowly into the system and is generally due to want of propelling power of the bowels. Neurotic and atonic dyspepsia, dilatation of stomach, anæmia, plethora, or stoutness, fulness of blood, brought on by rich food and sedentary habits, all produce it. Want of proper exercise produces a loose flabby condition of the limbs, the abdominal muscles, and the intestines. The bowels can not drive out the refuse matter as fast as they should. This condition is all the more intensified by the liver being sluggish, and refusing to send out the proper quantity of bile. These patients have numerous complaints. Many of them suffer from wind and sleeplessness; sometimes headache at others stomach ache. They complain of a bitterish taste,

a burning feeling in the limbs, hands and feet ; and without being able to tell the doctor what their illness is, are always full of aches and pains, fretful, unhappy and ill.

TREATMENT. The first remedy is to establish a regular habit of going to the closet at a fixed time, once or twice daily, whether you feel the desire or not, early in the morning or after breakfast. It is better to go at both these times. Method and punctuality in this respect are of the greatest value. Habit is second nature, and this good habit alone is sufficient to cure habitual constipation (2nd.) Never neglect the call of nature. If on the one hand, an urgent business calls you, and on the other Nature calls you urgently; attend to Nature, let the business wait. For if you give business the preference, and neglect Nature, either the action gets beyond your control, or if habitually neglected, the sensibility of the nerves of the rectum becomes so blunted after a time, that they fail to excite the desire to evacuate, and the delinquent suffers from costiveness. (3rd) Exercise is the cheapest, handiest, positively curative, and therefore the best of all remedial measures, for the cure of this form of costiveness. Three miles' walk a day is as good as a good purgative once a day. (See other exercises chapter VIII.) (4th) Attention. When you go to stool, pay attention to this important work. Do

not think of anything else. Strange though it seems, it is not the less true, that many busy people, when in the closet, and apparently engaged in this work, forget it, and in this quiet place, think of their business. So that a statesman will sometimes solve an intricate state problem, or a poet compose a good verse in this secluded position. No wonder, these people suffer from costiveness.

(5th) Drink and smoke. A glass of cold water drunk early in the morning followed by a smoke of tobacco, is with many persons, an opening medicine. Better for the dyspeptic is a glass of warm water. The addition of a teaspoonful of honey or glycerine to it makes it tastier and more effective.

(6) When the costiveness has lasted for sometime, the bowels should be relieved by an enema of soap water and castor oil, and then the permanent treatment commenced.

(7) Of all food medicines the best is a glass of the sherbet of ripe bael fruit in the morning. When bael is not in season, a ripe orange, papaya or guava should be taken daily, with the cautions mentioned on p. 123. A large ripe guava, boiled skinned, seeded, mashed with sugar is a delicacy as food, and efficacious as medicine. Apples and grapes if regularly taken will cure this sort of costiveness. And if the fresh, ripe grape is not available, raisins are just as good for the bowels. The milk of cocoanut is not only a sweet milk, but a first class laxative in acid or

irritative dyspepsia with habitual constipation. Haritaki, the chebulic myrabolan, is a popular aperient. It is safe, and is said to act as kindly to the bowels "as a mother to her child." (8) Of cooked foods, lentils, whole meal bread and a vegetarian diet are the best for habitual constipation. (9) Ripe tamarinds a year or two old, made into pickles or sherbet and taken daily in atonic dyspepsia and (10) Whey taken every day will establish a regular habit (11) A dose of castor oil at intervals of 4 or 5 days, gradually reducing the dose, and stopping altogether as soon as regular habit is established, (12) or a dose of olive oil, which is better to take, with the same precaution has a curative effect.

(C) CHRONIC CONSTIPATION.

CAUSE AND SYMPTOMS. Habitual constipation if allowed to remain uncured will gradually pass on to the chronic condition. The constant presence of a large quantity of faecal matter in the intestines brings about a paralytic condition, which increases till the patient loses the power, if not the desire to evacuate, the contents of the bowels as well as he likes. And if, as often happens, the intestinal secretions be diminished, the accumulations become drier and drier until a hard cylindrical mass several pounds in weight fills up the large intestines and refuses to pass out

of the body. The patient strains out a part every day but only a part, leaving back a large residue in the intestines. Everyday fresh accumulation of faecal matter forms behind the old stock, pushing it downwards, and throwing out a little of its lowermost portion. Thus the patient's friends and even the doctor believe, that his bowels are regular and his complaints imaginary. But the real condition is far worse. For a very large quantity of faecal matter in a semi-decomposed state remains in its lodging, gradually undermining the patients health, robbing him of healthy digestive power, slowly poisoning his blood, giving him headache, bad taste colic, and a peevish temper. The wonder is, that it does not do more harm. And it is a still greater wonder that while the patient complains of costiveness, his friends, who see him going to the closet everyday, wink at each other and laugh in their sleeves, without further inquiry. Sometimes a ball like swelling is seen on the right side of the abdomen, which remains fixed in its place, but allows soft faecal matter to pass by its sides, owing to the elasticity and momentary expansion of the gut surrounding it. As the swelling remains for weeks or months, it is often mistaken for a tumour. At others, ball like lumps varying in size from children's playing marble, to an orange, form and block up the rectum, making the onward passage of the portion behind, impossible,

TREATMENT. This resolves itself into three items, namely opening the bowels, flushing them thoroughly, and establishing a regular action. (1) Many physicians are of opinion that a sudden clearing out of the contents of the bowels is not safe, when there is fever, or other debilitating disease. They administer daily doses of salines like sulphate of soda or magnesia, Seidlitz powders, or the saline waters, in order that the liquid motions thus produced may gradually cause a diminution of size and thickness of the large fæcal mass. The writer remembers having reduced many years ago, a large fæcal tumour in this way. Sometimes these balls are impacted in the anus. They must then be scooped out with the handle of a spoon or the finger of an attendant, and the higher portion then softened and brought down by a glycerine-enema. (2) For flushing out the bowels, a large soapwater enema with castor oil, is the best. The patient lies on his left side. Two pints of warm soap-water, with two ounces of castor oil is slowly pumped up through the anus. This thoroughly washes down the fæcal matter of the lower bowels, and facilitates the downward passage of that contained in the upper. In the case of infants and children, the domestic remedy is to introduce into the rectum a stalk of the *pan* leaf, smeared over with butter, or a pencil of hard soap similarly softened and introduced. The result

is an immediate evacuation. A glycerine suppository is just as good. The flushing out of the bowels is subsequently done as in the case of adults, but with a smaller syringe and a smaller quantity of water and oil. (3) Then begins the curative treatment, namely establishing a regular habit. In both children and adults, a diet with a liberal allowance of vegetables and reduction of meat should be commenced. Such patients should eat ripe fruits every day. Brown bread, or flat whole-meal bread and butter, unless the patient is prevented by dyspepsia, should be taken to produce regular action of the bowels. Daily exercise of some sort, suited to the patient's age and constitution should be adopted. Massage by an attendant or by the patient himself should be practised. Massaging with one's own hands for the relief of bowels is instinctive. Electricity (p. 121) is of the greatest service. An occasional cold footbath is very efficacious. Dr. Munde in his book on Hydropathy says "I have often treated cases of obstinate constipation very successfully by ordering deep footbaths of cold water."

Chapter XII.

TERTIARY DYSPEPSIA.

This, the third stage of the disease, is marked by signs of ravage and desolation which it has caused in the various organs and tissues of the body, during its long reign of tyranny. In this chapter will be described only those conditions that are curable by the patient, with the help of the physician.

1. ANÆMIA.

CAUSES AND SYMPTOMS.—When due to chronic gastritis or acid dyspepsia, there is vomiting after meals, either sour or bitter. When accompanying malaria, the fever rises in the afternoon, and the spleen and liver are often enlarged. In women debilitated by frequent child bearing, there is leucorrhœa with atonic or acid dyspepsia. The anæmic patient is bloodless, pale, thin, eats very little, digests it with difficulty. Some patients become as thin as skeleton, and have spongy gums, diarrhœa, dysentery, or costiveness.

TREATMENT. Food in small quantities frequently repeated. Butter milk and whey. Sugar in reasonable quantites, chicken, fish, or dal soups. A vegetarian diet often gives better results. Pure

butter or cocoanut oil. Massage or shampooing with mustard oil, change to a healthier climate, outdoor exercise, good sleep. Iron tonics, Syrup, Ferri phosphate, Easton's syrup, Parish's Chemical food. Deschiens syrup of hæmoglobin.

2. GASTRIC AND DUODENAL ULCER.

SYMPTOMS : Burning sensation in stomach and below the breastbone; slight nausea increased by taking food. When the ulcer forms in the back part of stomach, lying on the back increases pain, leaning over a chair gives relief. If on the anterior surface, lying on the back relieves pain stooping over a support increases it; vomiting, pyrosis, and constipation are frequent. Blood vomiting in chronic cases. In duodenal ulcer, pain and burning on the right side.

TREATMENT. Patient should be put under a physician's treatment. Absolute rest in bed. In mild cases, milk and soda water or lime water by the mouth. Bicarbonate of soda 15 to 20 grains before food, or between meals, or 10 grains Bis-muth subnitrate. Half to one grain opium taken twice daily, or oftener, according to urgency of pain, enables the patient to digest the food eaten, and relieves pain. Food thus tolerated should be given frequently in small quantities. Rice gruel with milk or fresh butter-milk, or plain milk is the best. Sajou recommends neutralization of the

acid of gastric juice by frequent feedings, and by alkalies in regulated quantities. The patient remains in bed for 3 or 4 weeks. Three ounces of equal parts of cream and milk are given every hour, from 7 a. m. to 7 p. m. After 2 or 3 days, soft eggs, and well cooked cereals, like rice and barley are gradually added, until after 10 days, the following is to be given. Three ounce of milk and cream every hour, three soft eggs one at a time, and 9 ounces of cereal, 3 ounces at one feeding the total bulk at one feeding not exceeding 6 ounces. In addition to giving an alkaline powder midway between feedings, the powders are continued every half an hour after the last feeding till 10 p. m.

In severe cases when feeding by the mouth is not safe, the patient should be kept alive by rectal feeding. Milk, eggs and starch should be given in 3 or 4 ounce doses in enema. The treatment of ulcer of the duodenum is very nearly the same as that of ulcer of the stomach.

3. HÆMATEMESIS OR BLOOD VOMITING.

CAUSES. This is often tertiary dyspepsia ; namely, gastritis first, gastric ulcer second, vomiting of blood from the ulcer third. Duodenal ulcer, congestion of liver, enlargement of spleen, mitral obstruction, scurvy, purpura and malignant growths of œsophagus may also cause it,

SYMPTOMS. Pain, nausea, feeble pulse, followed by vomiting of blood, liquid, or in clots, in instalments. The points that show its difference from hæmoptysis are (1) that the blood is of a dark colour (2) not mixed with froth or sputum (3) often mixed with food eaten (4) there is no lung trouble. (5) no pain in chest (6) very often due to chronic dyspepsia, with pain in stomach (7) No difficulty of breathing (8) no blood seen in the nose (9) pain in stomach (10) nausea always present (11) Blood in stools.

TREATMENT. Absolute rest in bed. Ice to suck or swallow. Ice compress or mustard plaster over stomach, hot foot bath, opium or morphia suppository, hypodermic injection of morphia, injection of horse serum, tannic and gallic acids, hazeline, solution of adrenalin chloride 10 to 20 drops. Juice of *Durba* grass. Absolute fast.

(4) HICCOUGH OR HICCUP.

CAUSES.—In fevers, specially remittent fevers of patients suffering from Chronic dyspepsia, in congestion of liver, jaundice, constipation or vomiting, hiccup is a common complication. Irritative dyspepsia with heart-burn is frequently a cause of this complaint, so are hysteria and neurotic dyspepsia.

TREATMENT.—Produce vomiting with warm water and mustard powder, or a teaspoonful of

common salt, about 30 grains. Large quantities of bile, acid and mucus are vomited, as glass after glass of warm water is drunk. When at last colourless water comes out, the hiccough ceases entirely. If it returns, a smart purge completes the cure, assisted, if necessary, by a mustard plaster over the stomach.

Various other modes of treating hiccough, have been adopted with more or less success by different physicians. The following are the most likely to succeed:—Drink ice water or suck ice or swallow bits of ice or gargle mouth with ice water. Drink hot water in sips or sugared water with a squeeze of lime or lemon juice. Drink soda water and lime juice with a lump of ice in it. Drink effervescent water made by dissolving 40 grains of Bicarbonate of soda and 37 grains of Tartaric acid in half a tumblerful of water. Or drink the water found inside the young palm fruit. To produce influence on diaphragm, lie with face down on the floor, or tickle the throat with a feather, or take snuff and sneeze repeatedly, or change the position in bed frequently; smell the vapour of burnt pepper and cough. Put out the tongue for 5 or 6 minutes at a time, stretch the head back on the pillow as far as possible for 10 minutes. Keep the mouth wide open, then hold 2 fingers above the head, so far back, that the eyes must be strained to see them, and while fixing the eyes,

take deep breath. Hold the breath, after expiration, as long as possible. Press with the thumbs and nails upon and under the bony arches of the eyes and eyebrows. Compress meatus of the ears. Apply a firm abdominal bandage. Take one to three drops of peppermint oil on sugar or one drop of chloroform on sugar. Flex the legs on the thighs, the thighs on the abdomen, exert considerable pressure for a period of several minutes. This process pushes the abdominal organs upwards, they in turn press on the diaphragm. For obstinate hiccough take "Makaradwaja 2 grains, honey a few drops, mix well, rubbing for $\frac{1}{2}$ an hour, and administer with 1 ounce of the juice of the main root of the plantain tree" (I. M. Record.)

(5) LIVER DYSPEPSIA.

LIVER DYSPEPSIA.—A congested liver with tenderness and enlargement, will produce uneasy feeling on the right side, headache, nausea, bad temper, yellow coated tongue, bad taste, costiveness, hard whitish stools, flatulence, loss of appetite, indigestion and vomiting.

DYSPEPTIC LIVER. Long standing dyspepsia causes jaundice, and passive congestion of liver. Engorgement due to excessive eating and drinking is a common ailment.

TREATMENT. Make the bowels act daily. Sulphate of soda and magnesia, with Bicarbonate

of soda and peppermint water. This will make the bowels act, and keep the bile flowing. A warm bath every day or every other day for encouraging perspiration. If urine be scanty, take liquid extract of punarnava and nitric ether $\frac{1}{2}$ a dram each, in an ounce of cinnamon water. In atonic dyspepsia, diluted nitro-muriatic acid 10 drops in an ounce of Infusion Chiretta, twice daily will whet up the stomach and liver. Fomentation, turpentine embrocation or mustard plaster on liver, painting liver with Iodine tincture, or diluted nitro-muriatic acid. Light diet, soups, broths, milk porridge, rice gruel, walking or other exercise, sea bathing, river bathing.

(6) JAUNDICE OR "YELLOW"

CAUSES.—Simple Jaundice is caused by the blocking up of the bile duct, congestion of liver, narrowing of bile tubes, thickening of bile or dyspepsia. When due to dyspepsia, the catarrhal condition extends from the stomach to the duodenum, thence to bile duct, which it blocks up, so that the bile is prevented from going down to the intestines but circulates in the blood making the skin, the tongue, and the whites of the eyes yellow.

SYMPTOMS. Yellow condition of the skin and mucous membranes, stools white or clay coloured, urine deep yellow. Constipation, flatulence, itching of skin, loss of appetite, foul gases, bitter

taste, slow pulse, feverish feeling ; but very little fever. In obstructive jaundice which is often a result of duodenal dyspepsia these symptoms present for a long time. During the passage of a gall stone, which is only a lump of hardened bile, the pain is very intense, but ceases as soon as it passes out.

TREATMENT.—Fomentation or poultice over liver, saline purgatives, dry cupping, Vichy or Carlsbad water, Euonymin, Podophyllin, Soda and Potash salts, when dyspepsia is irritative. Nitromuratic acid and bitters in the atonic variety, warm bath, olive oil internally, skim milk diet, boiled rice, no sweet, butter, lard or ghee.

(7) GALL STONE.

DEFINITION. Gall stones are solid crystals of bile, formed by loss of their solvent property. They are generally several in number, and in size may vary from a pea to an egg. The crystals are impacted in the gall duct through which they pass, causing great pains.

DIAGNOSIS.—The pain due to the passage of a gall stone though excruciating, commences suddenly, remains very severe for a time, then ceases suddenly. But the pain of colic is entirely different (see p. 54). The pain of colic is in abdomen, that of gall stone in liver.

TREATMENT. Vomiting is Nature's cure. By pressing the muscles of abdomen, vomiting often causes expulsion of the stone. Therefore this symptom which commences with the pain, should be encouraged by drinking warm water mixed with mustard or salt. Hot bath, hot fomentation or poultices over the seat of pain, and hot effervescing drinks are good. If pain and vomiting persist, iced drinks, or chloroform inhalation, opium or belladonna internally, hypodermic injection of morphia, massage over painful part. After expulsion of stone, improve tone by taking daily 20 to 30 grains phosphate of soda and 30 grains bicarbonate soda or olive oil half an ounce, thrice a week,

8. HEART COMPLAINTS.

Dyspepsia produces heart complaints, and heart disease causes dyspepsia. In flatulent dyspepsia, the pulse often becomes intermittent and irregular, and the heart palpitates. A sensation of pins and needles pricking in the heart is felt, when large quantities of wind accumulate in stomach and intestines. In hysteric women, with flatulent dyspepsia, the wind rises up to the œsophagus, distends that tube, and produces such spasm, that a distressing ball like sensation is felt, called globus hystericus or the hysteric ball. In dilatation and hypertrophy of heart great distress is felt after a full meal, specially if wind forms in the stomach.

TREATMENT. Remove the dyspeptic symptom. When dyspepsia is due to disease of the valves of the heart, a watery motion produced by 4 drams of Epsom salts in 2 ounces of water will relieve the symptoms. The heart should be strengthened by digitalis, strophanthus, strychnine or brandy, prescribed by a physician, and the appetite increased by chiretta, calumba or quassia.

9. AFFECTIONS OF THE LUNGS.

STOMACH COUGH.—Acid in the stomach produces a cough which is relieved by sucking sugar-candy or taking sugar, or Bicarbonate of soda which neutralizes the acid.

PHTHISIS.—Dyspepsia is often a fore-runner of phthisis, and phthisis well developed produces or aggravates dyspepsia.

ASTHMA.—Mark L. Knapp has shown that there is an intimate relation between insufficient pylorus and asthma. When the pyloric orifice fails to offer resistance to the escape of food from the stomach into the intestines, the food undergoes no action by the gastric juice and leaves the stomach unprepared for intestinal digestion. Bad digestion with excessive gas formation takes place. The abdomen distends, presses on all sides, specially on the lungs, and produces the complex symptom of asthma.

10. DISEASES OF THE KIDNEYS AND BLADDER.

ALBUMINURIA. Albumen in the urine as a temporary or permanent symptom, without nephritis, is often the result of dyspepsia specially if the patient continues to eat meat and eggs. A vegetable or a milk diet should be adopted. Papain or the juice of the green papaya is the best medicine. The liver if affected should be treated. Butter milk may be taken as one of the best drinks.

DIABETES is a form of dyspepsia. In his excellent treatise on this subject, Major B. D. Basu has shown that diabetes is a manifestation of alimentary toxæmia or blood poisoning through the digestive system. He quotes Dietrich who found that "the sugar disappeared completely from the urine in 3 out of 9 cases of diabetes, in which lavage of the stomach was practised without enforcing an anti-diabetic diet" Dr. Mutch believes duodenal dyspepsia as the cause of diabetes, and Sir Havelock Charles is of opinion that dyspepsia plays an important part in the production of glycosuria the portent of diabetes. The fast is a cure both for dyspepsia and diabetes. Stomach washing cures both these diseases "pan-chewing is decidedly beneficial in diabetes" Says Dr. Basu, as we have seen it beneficial in dyspepsia, Cocoanut, whey, casein and

many other foods are good for both diseases. Finally, Dr. Prout believes in the beneficial action of green vegetables in "diabetes and other forms of dyspepsia" All these prove that the two diseases are allied.

GRAVEL is in nearly all cases, primarily due to dyspepsia. The lithic deposits are found in the urine of robust persons, suffering from irritative dyspepsia, and in chronic liver disorders. This condition is often associated with gout or rheumatism. The phosphatic variety is the result of atonic dyspepsia in old persons, and the deposits are like curdled milk, chiefly consisting of earthy phosphates. The exalic gravel occurs in the urine of those who suffer from neurotic dyspepsia. Uric acid condition is the cause of gout. Alkaline treatment should be adopted when the urine is still acid and the deposits are those of uric acid. In old persons suffering from cystitis and alkaline urine the treatment should be by benzoic and boric acids, Lime or lemon juice should form a daily item of food. Larger concretions too are driven out through the urethra, but when they become too large an operation becomes imperative.

II. GOUT AND RHEUMATISM are often the offsprings of dyspepsia. In one case, it is gravel; in another, gout, and in a third, rheumatism. The carbonate and citrate of lithum are very

useful in removing the urate of sodium from the body in gout ; the salicylate of sodium is useful in rheumatism.

12. DISEASES OF THE SKIN,

ERYTHEMA AND URTICARIA are often due to dyspepsia. Crabs, mussels, pork, salted fish and meat, cheese, mushrooms, cucumbers eaten without skinning, honey, bitter almonds, pickles and even oat meals will in many persons give this trouble.

TREATMENT. Stop the irritating food, take vegetables or milk diet. Rub cocoanut oil on skin. Warm baths. Bicarbonate of soda 30 grains in an ounce of Infusion of chiretta, thrice daily. Purgatives like sulphate of magnesia or castor oil. One ounce of powdered borax mixed with 3 quarts of water, is a good lotion for relieving the itching. Rubbing finely powdered rice or barley flour over the skin gives immediate relief. The dyspepsia should be treated as well. Warm alkaline baths are efficacious.

ROSEOLA.—Rose coloured spots on skin appear as the result of dyspepsia, and should be treated like erythema and urticaria. Tar ointment or Liqr. Carbonis Detergens with rectified or methylated spirit equal parts, mixed with water should be used as a lotion.

PRURIGO SENILIS.—The old man or woman's itchings are due to dyspepsia, jaundice, diabetes.

Treat the original disease, Warm and alkaline bath as in urticaria. Carbolic lotion 1 in 100 to take away the irritation. Sandal wood oil one dram mixed with cocoanut oil two ounces, to be rubbed over the skin. If liver is affected, ten drops of diluted nitro-muriatic acid in an ounce of Infusion of Chiretta or Quassia twice daily, an hour before meals, Sea bathing soon relieves it. An imitation sea bath may be made by mixing Bicarbonate of soda 4 drams, Common Salt 10 ounces, tepid water 4 gallons.

13. TROUBLES OF THE BRAIN, AND MIND.

(A) NIGHT-MARE. This is a frightful dream, often caused by late and heavy suppers, especially if the person is dyspeptic. The patient dreams he is in great danger, from which he can not get out. The distress is increased by a feeling of heavy weight on the chest which prevents free breathing. At last he starts up with a jerking motion or utters a cry and gets rid of the dream. Little or no supper is the best preventive.

(B) QUAIN DREAMS.—Almost every dyspeptic is afraid of some food forbidden to him. Such food if taken, appears to be capable of so exciting the brain during sleep, as to produce particular dreams connected with events in the individuals past life. An aged dyspeptic gentleman who was

formerly an officer in N. E. India, and whose dyspepsia was probably the result of eating too much of the rich cream and butter in that part of the country, states, that he has given up these foods for many years. But if now he ever eats a little butter to breakfast, it causes at night dreams of hunting excursions, in which he often engaged himself in the forests of that region 35 to 40 years ago. The evident lesson is to avoid such food.

(C) SLEEPLESSNESS. Strong tea, excessive brain work, anxiety, abnormal heat, cold feet, head-ache, and many other causes prevent sleep. Most persons can not sleep if they go to bed with a full stomach; some can not if it is empty. Treatment as on page 105.

(D) HEAD-ACHE. Sometimes it gives notice of its coming. The patient loses appetite and feels out of sorts for a few days. Then one afternoon, a severe head-ache compels him to tie a hard knot on the head, retire into a dark room, shut the eyes and groan. By and by, he feels sick, sits up and vomits a large amount of acid and bitter stuff, mixed with what he ate at breakfast. One or several vomitings give him relief and he falls into a refreshing sleep, from which he rises cured. Women suffer more from this complaint than men.

Intense head-ache, called megrim or half head-ache, often results from accumulation of gases, increase of catarrh, cold or acid drinks, certain articles

of food and a vitiated condition of the gastric juice. Some sufferers make the strange statement that acid curdled milk, or butter milk turned sour, never produces head-ache, but vegetable acids do. The three most important remedies for such head-ache are, vomiting, purging and antacids, or alkalies. After the stomach is well washed with mustard and water or salt and water, one dram of Bicarbonate of soda alone, or with four grains of antifebrin, quickly cures the head-ache. If it still persists, a dose of some purgative completes the cure. When due to vitiated gastric juice, it yields to alkalies, when to congestion, it is relieved by fresh air, and rubbing neck from above downwards for 15 minutes. Salicylate of soda, and Potash bromide combined act better than either of them alone.

E. VERTIGO, ALSO CALLED GIDDINESS OR DIZZINESS, is one of the most distressing and often inveterate enemies of the dyspeptic. It usually comes in 3 to 5 hours after a full meal, and also early in the morning. All things seem to be going round. Patient walks with unsteady steps, and feels as if he is about to fall down. This passes off in a few seconds, but reappears after some minutes. The morning giddiness passes off gradually as the day advances. Belching of wind and the movements of the body give relief ; and at about midday he is quite well. In severe cases the symptoms return in the evening or at any other

time. So that, when going up or down the stairs he is afraid of falling down. If he does some reading or writing, then looks up to give his eyes rest, the beams, the ceiling, the pictures on the walls, dance round and frighten him ; and when he goes to bed, as soon as he has laid his head on the pillow, especially if he lies on his back, a whirling or reeling sensation, lasting from 5 to 10 seconds, at once reminds him of his misery. When he turns in bed, it flashes across the head for a few seconds. In the morning if he bows down his head, the brain seems to reel, and when he stands up, it does so more.

TREATMENT. In many cases accumulation of wind in stomach is the cause, and belching it up is the remedy. For this reason, Trousseau called it 'stomach vertigo' But it is certainly "Enteric vertigo" or "Intestinal giddiness" too. For if the abdomen of the patient, be pressed, the wind passes up through the open pylorus, the stomach and mouth, and down through the rectum, and the patient gradually feels relief. Unfortunately the cure is not always so easy, and the trouble continues in spite of drinking soda water, hot water, and taking bicarbonates of soda, potash, carbonate of magnesium, and all sorts of carminatives, and sedatives like Bromides. Ammonium Chloride in 10 grain doses thrice daily produces temporary relief.

What should be done then? In the giddiness of dyspepsia, the "Hayoo" sound of the belching is as much a harbinger of the presence of some offensive matter inside the alimentary canal, as the cry of the jackal is, of the arrival of a hyena or wolf in an Indian village at night. It is for the physician to find out what this offensive matter is. In by far the great majority of cases, it is a vitiated condition of the gastric juice, or a sub-inflamed condition of the gastric mucous membrane for which pepsin and acid, bitters and alkalies are prescribed with little effect. Better is the result with Papain or the milk or juice of the green Papaya, which seems to produce a healthy gastric mucous membrane, by dissolving out the thick membranous substance, formed by the long standing catarrh, in the same way as it makes tough meat soft, when boiled with it. But even this often fails to effect a permanent cure.

In our ignorance of a specific drug, the only successful treatment seems to lie in fast, partial or absolute. An absolute fast for 24 to 36 hours relieves the giddiness for about a week and sometimes more. And if the quantity of food is cautiously increased, and the fast repeated in a week or ten days, very satisfactory results may be obtained in about a month. But as such long fasts are not possible for all, the patient who can not do so should take easily digestible food in the day and

no food at all from sunset to sunrise. All he can take at night is a tea spoonful or two of the juice or 20 to 30 drops of the milk, of papaya or 2 grains papain and a bottle of soda water. This gives very good results. He should go to bed at 9 P. M. and avoid lying on the back which often increases giddiness. A cold water bath in the morning, with a jet of water falling on the nape of the neck from a height of 2 ft. for one minute is often a help to the cure. The nape should be rubbed briskly with towel while the water falls. Exercise and a river bath in the morning (p. 139.) are very efficacious.

(F) IRRITABLE TEMPER.—If a thin man takes offence at every slight fault of others, he is, in nine cases out of ten, a victim of chronic dyspepsia. This misfortune which not only embitters the patient's own life, but makes his best friends miserable, can only be removed by a strong exercise of the will power, a resolution not to allow himself to speak out without thinking twice. It is a mental gymnastic exercise to make one's life tolerable to others, which becomes successful by practice. The Narayan or Vishnu oil of Ayurvedic Pharmacopeia rubbed over the head an hour before a cold bath is an excellent help. Eight to nine hours' sleep including a mid day or afternoon siesta is necessary. Internal medicines are useless.

(G) MELANCHOLY THOUGHTS,—A dyspeptic is the owner of an enterprising business firm. One evening he is invited to dinner, eats a rich dish of *pollaw*. He spends a bad night, full of dreams, rises next morning with headache and wind. He is now hopeless of his business ; fancies he is sure to be ruined, as there are many difficulties he did not foresee, but understands them now. He suspects his assistants had been swindling him, which he should have known before. Besides, he believes his wife spends away all his money. It is no use taking the trouble of earning money. He must wind up business and retire. Presently his wife sends for the doctor, who comes and gives him an emetic or purgative, puts him on liquid diet, and orders him to go to bed again. In 24 hours he is cured. His wife and assistants are once more faithful and business hopeful. All the trouble was due to the *Pollaw*.

(H) NOISES IN HEAD AND EAR. (Latin Tinnitus aurium). The patient hears, often in one ear, a roaring, humming or buzzing sound, worse at night, specially when in bed. So that he has to press the affected side on the pillow to get rid of the sound, and sleep. Sometimes it haunts him all day and night, making him so miserable that he runs mad, or commits suicide.

TREATMENT. Examine the ear, remove wax if any, syringe with warm water, wipe dry, put a

pellet of cotton wool, wetted with glycerin in the ear. Inflate middle ear with air blown in by Pollitzer's bag, If due to malaria or rheumatism, Quinine Hydrobromate 5 grains, or salicylate of soda 5 grains. Chloride of ammonium in 10 grains doses. In atonic and neurotic dyspepsia, treat the dyspepsia. Remove to better climate. The writer was a victim of this for nearly 10 years, was much benefited by a sea-side residence, and completely cured by removal to a drier climate. Cure the dyspepsia too. When the complaint is due to organic causes it is incurable.

(I) HYSTERIA, HYPOCHONDRIASIS, NEURASTHENIA, are allied diseases and are as often the causes as the effects of dyspepsia. For treatment see p. 74-75.

(J) SUPRA-ORBITAL NEURALGIA. A patient came with such intense pain over the eye brows, that with great difficulty he said he was occasionally subject to these pains. The writer was wondering what the cause could be, when the patient belched. This gave the clue to its being due to acidity or wind. An ordinary dose of Bicarbonate of soda with aromatic spirit of ammonia was given; he had many more belches and in 20 minutes, said he was nearly cured,

Chapter XIII.

THE DYSPEPTIC'S DIRECTORY.

ACIDS.—Digestion of acid without trouble is a happy event. The better you digest acid foods and drinks without punishment the nearer is your recovery. But all cannot take the same acid, nor can all acids be taken by the same patient. You must find out for yourself, the acid agreeable to yourself. Sufferers of atonic and neurotic dyspepsia, and anorexia, and old persons with alkaline urine depositing earthy phosphates require acid foods.

ALCOHOL AS MEDICINE. In loss of appetite due to fatigue, in convalescence from acute disease when digestion and strength remain a long time depressed, and for dwellers of towns with sedentary habits, suffering from weak digestion, Dr Ringer advises a glass of wine or a little brandy and water, to be taken shortly before food. On the contrary, Dr. Richardson says "The common idea that alcohol acts as an aid to digestion is without foundation. It is one of the most definite of facts that persons who indulge in what is called moderate use of alcohol, suffer from dyspepsia from this cause alone".

THE GOLDEN MEAN.—Probably both opinions are right under certain circumstances, Alcohol

can create no new power. It is only the reserve force of the body which alcohol calls up, when vital powers are low, and by using it to stimulate circulatory and nervous systems, tides over the danger and saves life. Its action is the same in severe dyspepsia. It fans up the dying embers of digestive power. But if continued for any length of time, when digestion is good, it produces as Dr. Richardson says, the disease alcoholic dyspepsia. Therefore, if the dyspeptic is too weak to digest food without its aid, if he takes his wine or brandy with or immediately before a meal, never in the morning, nor between meals, and only in quantities containing half an ounce or less of absolute alcohol in 24 hours, reduces it when he gets better, and has the will power to give it up entirely when he can digest without its aid, then he can follow Dr. Ringer's advice. He should take wine or brandy, as he takes his quinine or castor oil, not because he feels any pleasure in eating quinine, or drinking castor oil, but for a specific purpose, a limited time, and in guarded doses. Alcohol is a good temporary servant, but a treacherous friend.

ALCOHOLIC, OR DRUNKARD'S DYSPEPSIA.
The inside of the stomach is covered over with a thick mucous coating, obstructing the proper secretion of gastric juice, and setting up fermentation in the food eaten. The patient has acidity,

wind and pyrosis. He passes a miserable night, and in the morning, perhaps as a sequel of the last big dose of whisky, overnight, begins to vomit a bitter sour liquid. A thick tenacious ropy mucus, coming out of his mouth, hideously dangles below his lips, like several white strings before they fall. He eats as much as a little child and digests that little with difficulty. He often becomes boisterous.

TREATMENT. No self treatment is possible; a physician must take charge of the case. If heart liver and kidneys be still healthy cut off the alcohol supply altogether. But if dropsy, heart disease, and nervous degeneration show that sudden stoppage might prove dangerous, small quantities must still be allowed for sometime. Liquor Ammonia Acetatis and Potash Bromide, often bring back soberness in a boisterous patient. Gastritis should be treated with Bismuth Carbonate and chloroform water, which stop vomiting. The compound tincture of cinchona, the tinctures of nux vomica and capsicum may be given to whet up the failing appetite. Liquid food, butter milk, ripe pineapple, the juice of the green papaya fruit, and the ripe fruit should be the only food for a few days.

ALCOHOL HABIT.—The only way of getting rid of alcoholic dyspepsia is to give up drinking. As such patients are fond of taking tasty things

with their drink, stop or gradually reduce the drink but give him plenty of savory things e.g. pies, patties, fried fish, biscuits, chutneys, *kochowris*. Substitute opium habit, a less evil, which often succeeds in breaking off alcohol habit. Let patient take lemon or lime juice, dates, raisins and ripe tamarinds. Gradually make him a vegetarian.

IS ALCOHOL A FOOD FOR INDIAN DYSPEPTICS? No. The desire for alcohol drinking is a consequence of meat diet. Olsen, an English authority, writes in his 'School of Health.' "It is a well known fact that the nations which consume large quantities of flesh food are also noted for an excessive consumption of alcoholic liquors. It is further-more true that the craving for alcohol is overcome only with the greatest difficulty, while a flesh diet is adhered to, but loses its hold with most victims, when a diet of well chewed cereals, fruits, nuts, and vegetables is adopted." Platen the German authority, writes (in his 'New Treatment' vol. 1) "when you have finished a good beef steak, you feel little disposed to wash it down with a glass of water. You want a glass of wine or a glass of beer. If on the other hand you had taken a dish of good nourishing milk porridge, with bread and fruit you would feel no desire for beer or wine."

THE LESSON.—From the above we learn (1) That in treating alcoholic dyspepsia, meat diet should be stopped and a vegetarian diet substituted.

Make a drunkard feel disgusted with a flesh diet, he will soon hate wines and spirits. (2) That vegetarians as most people of India are, they do not require alcohol as food, be they dyspeptic or not. If unfortunately you have contracted alcoholic dyspepsia, the best way of getting rid of it is, to throw off the habit with a tremendous will power. Look at yon ball of fire in the sky, the sun. His scorching heat has brought us many a misfortune ; but it has saved India from the vice of drinking, by making it impossible for a drunkard to live long here. Arise then, throw away the sparkling goblet and say to yourself on oath—"These hands of mine shall not touch that intoxicating glass any more." This is the surest cure.

ALKALIES are acrid substances capable of neutralizing acids, and are of great value in acidity. They are vegetable, as Carbonate and Bicarbonate of potash, mineral as soda bicarb, Magnesium, Bismuth Carbonate, and Volatile, as Carbonate and aromatic spirit of ammonia. A good powder for making soda water or lemonade is Bicarbonate of soda, $8\frac{1}{2}$ ounces, Tartaric acid $4\frac{1}{2}$ ounces Citric acid 3 ounces, sugar $2\frac{1}{2}$ ounces. Powder, mix, heat in a pan ; when particles aggregate, stir well till they be granulated. Keep in a well corked bottle with label "Effervescent citro-tartrate of soda" dose 1 to 2 drams in a glassful of water. It is a nice drink in constipation, wind and acidity.

ALMONDS. Bitter almonds contain the elements of Prussic acid, a deadly poison, and should be avoided. Sweet almonds are nervine tonic, good in neurotic dyspepsia, brainfag, vertigo and headaches.

ANISE AND DILL FRUITS are very useful in the indigestion of infants. When you see a baby crying without apparent cause, feel its abdomen, and if flatulence or gurgling be found, give it anise water or dill water (aqua anethi) in teaspoonful doses every hour and rub the abdomen with warm turpentine or cajuput oil. The child falls asleep and generally wakes up cured of its acute dyspepsia. Do not give milk for some hours.

APPLES contain malic acid and are good food in chronic dyspepsia, and liver disorders. Custard apples are good in costiveness.

ARECA NUT used for mastication with *pan* leaves, or alone, excites secretion of saliva.

ARROWROOT boiled with milk and water is easily digested in diarrhoea, dysentery and gastritis.

ASAFCETIDA is a powerful intestinal antiseptic, prevents wind, mixed with boiled *Urid* dal prevents fermentation.

BAEL FRUIT.—The liquid extract from the green fruit is a valuable medicine in diarrhoea. The pulp of the green fruit dried powdered and a teaspoonful of this powder, boiled with 6 ounces of cow's milk and 12 ounces of water, is a valuable

food-medicine in the diarrhœa of children (see also pages 72-75.)

BARLEY.—A decoction of pearl barley is a soothing drink in gastritis, dysentery, and diarrhœa. Barley powder boiled in water, makes a light gruel, which with or without milk is part of low or slop diet in this and many other diseases. (See Chattoo).

BEEF.—About the only preparation of beef which is perfectly safe for the Indian dyspeptic, whose religion allows him to take it, is beef tea, both in acute and chronic dyspepsia. Roasted and grilled beef are too rich for such patients in the tropics, and tinned preparations are not always quite safe.

BLACK BERRIES, when ripe, are good in atonic dyspepsia, taken after meals.

BISCUITS (fro n-bis, twice, and cuit, baked) should, as the name implies, be well baked. Arrow-root biscuits and 'digestive biscuits' are best. They should be eaten dry and chewed well. Biscuit powders may be taken with milk.

BREAD. Wheaten bread is the 'staff of life' of nearly $\frac{2}{3}$ of the human race. Fermented bread is easily digested. Of these, white bread is better than brown, stale bread 4 or 5 days old, better than new bread, and toasted bread better than untoasted, for the dyspeptic. The toast must be crisp, eaten when yet slightly warm, without butter, but with jam, meat or vegetables, and chewed well.

FLAT BREAD, called ROTI or CHAPATI is unfermented, but not inferior to fermented bread in nutritive value. In Mexico and Scandinavia, it is made in right Hindustani fashion. When baked soft, and thrown for a few seconds on live fire, it swells with air, and separates in two halves, a thinner, fit for the dyspeptic, and a thicker, for persons with good digestion. Or it may be baked hard and crisp, like biscuit. This requires good chewing and is easily digested. Fried in clarified butter, the *roti* is called *poory*, not so well for all dyspeptics as the *roti*. Whole meal bread is good for those who suffer more from costiveness than dyspepsia. The coarse particles of bran cause irritation of the bowels and drive down the fœcal matter more easily than bread made of fine flour. If it causes diarrhœa, stop it.

BUNS, CRUMPETS AND MUFFINS are cakes or modified breads, which may be taken in the atonic or neurotic form of the disease, for the sake of variety.

BUTTER, may be taken in small quantity by the dyspeptic, if it is quite fresh. Ghee is boiled and purified butter. Both turn sour after a time by development of Butyric acid. It is better to boil them before taking, and best to avoid them till you are cured.

CAMPHOR—is a stimulant, astringent and carminative, used in fevers, diarrhœa, gastritis and

flatulence. It is a poison to the microbes of cholera, and is both preventive and curative of that disease. In the far off interior of India, Burma and Ceylon, where it is difficult to get filtered water; water boiled, strained and slightly camphorated should be drunk as a safe guard against fevers, dyspepsia, diarrhoea, dysentery and cholera.

CANNABIS INDICA (GUNJA) and cannabis sativa (BHANG) The former is smoked by *Sanyasis* for concentration of attention, the latter used as a domestic remedy for children's indigestion and as an exhilarant on festive occasions. It may be used in atonic dyspepsia if prescribed by a physician.

CAPSICUM.—Red pepper, Bengalee *Lanka* Hindi *Lal marich*, is both a bane and antidote in this disease. The B. P. Tincture taken in 5 to 10 drops with Infusion of chiretta, $\frac{1}{2}$ hour before breakfast, or dinner is an appetizer. Pills made of equal parts of capsicum, rhubarb and ginger are given in flatulence. It imparts a warmth to the curry or pickle with which it is used, and is therefore liked all over the world. Eaten in excess, as it is in the swampy districts of North East India it sets up violent gastritis, and is a potent cause of chronic dyspepsia, which is never cured, if the habit of eating it is persisted in.

CARMINATIVES are substances which acting upon the stomach and bowels relieve pain by

expelling gases upwards and downwards. Such are ammonia asafœtida, aniseed, cajuput, cardamom, camphor, coriander, dill, nutmeg, peppermint, spearmint, saffron.

CATECHU. The well known domestic remedy for cuts, bruises and bleeding, is an astringent in diarrhœa, and checks the waterbrash of dyspepsia. Chewed with *pin* leaves and slaked lime, it imparts a bloodred colour, to the saliva, and increases its alkalinity, thus being of service in irritative dyspepsia.

CHATTOO. Or SATTOO—Sanskrit *Shakto* the food of the poorer classes, in many provinces is a fine powder of roasted gram or barley. Gram *Sattoo* is indigestible for the dyspeptic, but that made from barley is well digested. Barley if allowed to germinate, and then the germination stopped by drying, is called malt. This process produces in the malted barley a ferment called DIASTASE, which like the ptyaline of saliva, and amylopsin of the pancreatic juice, has the power of converting starch into grape sugar, making it quickly digestible. Now, if barley be made to pass into the stage of malt and then made into *sattoo* or malt flour, it becomes one of the most easily digestible of foods. In an inveterate case of intestinal colic, the only food the patient could digest was barley *sattoo*. Surely it was the dextrinizing power of the DIASTASE that made

it so digestible "Do not make your whole breakfast of *sattoo* nor any part of supper. Do not eat it more than once a day, and never take it without mixing it with water" is the advice of Charaka. Evidently the water develops the full dextrinizing power.

COFFEE. Induces dyspepsia, but is not astringent like tea. One or two cups a day is a good stimulant. In excess it produces rapid pulse, tremor, dyspepsia and depression of spirits.

COCOA, exhilarates without producing or aggravating dyspepsia, and is the substance that "cheers but not inebriates". It contains 25 to 30 percent of nitrogenous matter, is good for neurotic dyspepsia and brain workers. But as it contains a good deal of fat, it is not good in all forms of dyspepsia. It has the remarkable power of preventing tissue waste, so that a dyspeptic can well stand the effects of a fast, so long as he is under its influence. It should be made with boiling water, and boiling milk added.

COOKING FOR THE DYSPEPTIC. (A) BROTH. Chop finely the meat, put it for one hour in cold water, boil with [gradually rising heat, the boiling being reached in 20 minutes. Now keep up the boiling for sometime. The gelatin and myosin all come out in the soup, and when the albumen and fat are strained out, a clear soup is obtained. **(B) STEWING.** Place the meat in an earthen jug

with a cover. Immerse the jug in a kettle of water, gently simmering for 3 hours, this makes a dainty jug soup and stewed meat. Very little water is required for it. (C) CURRY. When the meat is intended to be eaten, with bread or rice, put the meat in boiling water for sometime, which coagulates the albumen ; the heat is then reduced, and cooking goes on, on a slow fire. (D) BROILING on a grid iron, is a good way of cooking meat for the dyspeptic. (E) ROASTING is nearly of the same value. (F) RAW MEAT JUICE. It is prepared by "cooking without fire". Take 6 ounces of well minced meat, put it in a wide mouthed bottle. Add 14 ounces of pure cold water, 5 drops of strong hydrochloric acid, and 30 grains of common salt. Cork up the bottle, shake from time to time for 3 hours. Then strain through linen, and let the patient take it in small sips. It contains all the soluble extracts of meat and is extremely well suited in most forms of dyspepsia. It may be flavoured with lime juice, pepper, ginger and more salt. (G) FISH. Should be boiled or stewed for the patient. When fried it is digested with more difficulty. (H) In cooking *Dals* or pulses for the patient, wash the dal in water for some hours, then let it be cooked in the same water in which it has been standing, for a large part of the nourishment has passed in the water during the soaking. When sufficiently soft add spices and

condiments, with oil boiled in the kitchen-spoon, and finish with adding salt. (1) **VEGETABLES.** These are boiled, baked, roasted, fried, pickled, or made into pies pastry, tarts, sweets and curries, either purely vegetable or mixed with fish or flesh. Curries are important items in the dyspeptic's dietary. But our vegetables are so many and their combinations so varied, that it is only possible to give the following general directions. (1) Do not put too many spices for flavouring. (2) Do not use curry powders of the bazar, but make your paste or powder at home. (3) Use little or no red pepper and very little of ghee, in cooking for the dyspeptic.

DATES. Indian dates are poor in quality. The imported dates may be taken with caution in acidity and neurotic disorder.

EGGS. Some dyspeptics eat eggs well; the great majority can not digest them. The brandy and egg mixture of the Pharmacopœa is a food-medicine given in cases of extreme weakness, and is a stimulant mixture. It is made by mixing the yolk of an egg, with 2 ounces of brandy, 2 ounces of cinnamon water $\frac{1}{4}$ ounce sugar, well beaten up before drinking. Dose 2 drams for children, 4 drams up to 18 years, 1 ounce for a man or woman. Raw eggs are very well borne. A simple way of taking them is to mix the contents of an egg with a little water and a lump of sugar, in a

glass, shake well and drink. The dyspeptic whose digestive power has improved, may take a poached or half boiled egg, If eggs cause wind, nausea or headache, give them up.

EGG-FRUIT. Or brinjal (Sanskrit Bartaku, vernacular, Begoon, Bhanta, Mahati, Himpoli, Kuterikai) is the most digestible kitchen fruit, highly prized by authors as "Appetizing and wind relieving" a valuable food in "anorexia, cough and heart troubles" and is a safe food in most forms of dyspepsia. It is best eaten roasted in hot ashes and then mashed with salt and mustard oil ; or boiled, fried or pickled. "By Europeans they are usually prepared by being half boiled, the internal part is then scraped out, mashed with pepper, salt and butter, then replaced and baked" (Watt).

FISHES. Fish is a favourite food. For the dyspeptic the white fishes *khoyra* and *Belia* of Eastern India and the white sea fishes are the best. Young *Rui* the Indian salmon, and mango fish or *Topsi* a kind of sardine, found principally in Bombay and Bengal, is a delicacy well suited to the dyspeptic. Of tank fishes, *Koi* and *Magoor* are good for weak stomachs. But the lobster, the shrimp, and the *Hilsa* should be avoided. The saw fishes of our Indian Ocean are easily digested. But it is only the coast people

who care for them. The *Mouroulla* is a small white river fish very tasty and easily digestible.

FLOUR, GOOD AND BAD.—To judge of the quality of flour, take a portion in your hand, press between the thumb and forefinger. If it feels loose and lively, it is good ; if damp and clammy, bad. Put a little in the mouth, if bitterish it is bad, if sweetish, good. Press the flour with a hard smooth thing. If the mark be brown, it was either made from inferior wheat, or contains bran. If white, probably good.

FOWLS OR BIRDS.—Breast of chicken, and chicken soup, are easily digested. So are snipes. But pigeons, ducks and geese, do not suit our patients.

GARLIC.—is good in intestinal dyspepsia, uric acid and gravel diathesis.

GOAT'S FLESH is very digestible if the kid is under a year old. The he-goat is preferred, for eating. In the dyspepsia of phthisis goat's flesh is supposed to have a specific curative power. Goat's milk is good in infantile cirrhosis of liver.

GOURD. The white or bottle-gourd can be stewed with acid fruits and taken after meals in atonic dyspepsia.

GRAPES. When unripe, 'grapes are sour,' The ripe, good in atony and duodenal disease. The grape cure of this disease is a treatment in which

grapes form the principal diet (see also p. 161).
GUAVA p. 161.

HONEY eaten with bread is good in irritative and neurotic dyspepsia. It is supposed to increase virile power.

ISPAGULA. Good in gastritis, gastric and duodenal ulcer and dysentery.

JACK FRUIT. (Kanthal). The stones of the ripe fruit roasted, are eaten like almonds in neurotic dyspepsia.

JAMS may be taken when ripe fruits are not available. Jams made of Boel fruit are good in costiveness.

JELLIES.—Of fruit jellies the best are, guava, pineapple and mango (*Amsut*) good in anorexia.

KARELA (Bengalee *Uchchay*) Good in torpid liver gout, rheumatism, and worms. It is an appetizer.

LADY'S FINGER or okra. (Vernacular *Bhindee Ramtorui, Dharos*) the mucilage from the seeds and fruits is used as a demulcent. As a food the young fruits boiled may be taken in gastritis bulimia, dysentery and gonorrhœa.

LEMON AND LIME JUICE.—A good remedy in anorexia, scurvy, jaundice, gravel, fermentation, atonic dyspepsia, and alcohol habit, in which it is a substitute for alcohol. A great traveller says "Lemons have been his daily medicine, and he has

not been sick an hour for thirty years" (Taylor on Dyspepsia). To preserve lime or lemon juice, mix brandy 1 ounce with the juice 10 ounces, and sugar 5 ounces. Pour in a bottle cleaned with hot water and dried. Fill up to the neck, pour olive oil on the top, to exclude air, cork tightly. It may be taken with sugar and powdered pepper to improve appetite.

MAIZE—The green maize roasted or made into hominy is a light food.

MANGO—the king of Asiatic fruits, when unripe and stewed is good for anorexia, liver disorder and atony. The green fruit, skinned, stoned, cut in pieces and sundried called *Amchur*, is used to flavour *dals* and pickles, all round the year, and is an excellent anti-scorbutic. *Achar* is a tasty and appetizing paste, made by crushing the skinned and stoned green fruit, with mustard and various other condiments. It may taken in liver disorder, atonic and intestinal indigestion. When ripe the best varieties of *Fuzli*, *Bombay*, or *Lingra* is the most delicious of all known fruits and may be taken in nervous and atonic dyspepsia and constipation.

MELONS.—The green fruit cooked is easily digestible. The ripe fruit, the *Khorbuja* of Lucknow and *Sarda* of Punjab are good in intestinal atony and constipation.

MENTHA PIPERITA, (peppermint), **MENTHA VERIDIS** (spearment) are both stimulant and carminative. The oil is very useful in colic.

MUTTON.—is the most digestible flesh if the lamb is under a year old.

NEEM (*Azadirachta Indica*) as the first dish in breakfast, fried or in soup. The leaves made into a paste with turmeric and cream, a good embrocation for itches, eczema, and urticaria of dyspepsia. Neem soap and neem oil are just as valuable.

OATES—The porridge of oatmeal, is easily digestible and nutritious, and makes the bowels regular in costiveness and diabetes.

OPIUM is the most valuable of all medicines and is so powerful that it has been called the "gift of God to man." Millions of old men and women derive a stimulating and sustaining effect by eating it daily. It is a valuable medicine in gastric ulcer, diarrhoea, and dysentery. It checks all secretions except sweat and milk.

ORANGE.—One orange, eaten the first thing every morning keeps the bowels regular.

PATOLE.—(*Trachos anthesdioica*) Sanskrit and Bengalee Patole ; Hindee Parwar ; S. Indian Komboo Pudala, or Komboo pottah, is a delicate fruit, extensively eaten, all over India. The green fruit is an adjunct to powerful drugs, the juice of

the mature leaves is valuable in jaundice, and liver complaints. The tender leaves boiled and eaten as the first dish in breakfast, are appetizing. The young fruits boiled, fried or roasted are easily digested by the dyspeptic. The root is a powerful cathartic.

PAPAYA (Bengali paypay, Hindi Papita, Guz-rati and Maharatte Papai, Burmese Himbothi) is vegetable pepsin, and very important for the dyspeptic. The milk of the green fruit taken with sugar, is a valuable remedy in chronic acid dyspepsia, and a teaspoonful of the juice of the green fruit, on empty stomach in alcoholic dyspepsia and dyspeptic giddiness. The green fruit sliced, or even the leaves, boiled with any tough meat will make it tender. Curry or jelly of the green fruit is good food in dyspepsia and enlarged spleen. The ripe fruit is a reputed remedy for constipation. Papain the ferment is prepared from the juice by precipitating with alcohol and drying. To get papayotin, the active principle, incise pretty deeply with a knife the green fruit, and let the milk flow out ; collect and put on a sand bath, so that the slow heat completely dries up the milk in a day, and makes it a whitish powder like papain. Both papain and papayotin are indiscriminately called papain, and as their action is identical, may be kept in the same bottle, well corked. Dose 1 to 2 grains with sugar or

milk, after meals. Papain is superior to pepsin in dyspepsia for the following reasons:—(1) That pepsin only manifests its digesting power in an acid medium, or given with an acid. But in acid dyspepsia too much acid is always present. The administration of pepsin with an acid here, would be like adding fuel to fire. As papain does not require any acid's help, it is a safe remedy to give in these cases. Pepsin without acid, to be useful in such cases must be given in very large doses, 25 or 30 grains, which are likely to produce diarrhoea (2) That as the action of pepsin ceases as soon as it comes in contact with an alkaline secretion, it is apparent that its power dies out as soon as it passes out of the pyloric gate, and arrives at the junction station in the duodenum, where the secretion is alkaline. But papain which acts well in an alkaline medium, pursues meat, egg, fish and other albuminous foods down through the duodenum into the intestines, and with the help of its friends the bile and pancreatic secretion, completely digests all such foods. These are no small considerations for orthodox Hindoos and Mussulmans, who have strong objection to taking pepsin on religious ground. Papain relieves loss of appetite, sleeplessness, headache and giddiness.

PIPER NIGRUM. Black pepper is used as a condiment all over the world. The confection of peppers is a reputed remedy in piles.

PINE-APPLE is good in nervous anorexia, atonic, duodenal and alcoholic dyspepsia. It is supposed to have an injurious effect on the womb of pregnant women.

PLANTAIN OR BANANA. The *Kachkela* or green plantain is extensively eaten, cooked. Owing to its large amount of tannin and its digestibility, *kachkela* is a valuable food for patients suffering from dyspepsia, diarrhœa and dysentery. The flowering tops are eaten cooked, and is a light food in diabetes. The inner portion of the stem called "*Thor*" in Bengal, cooked with mustard and condiments, is a tasty curry in anorexia and all forms of dyspepsia. The ripe fruit contains a large amount of proteids, is very nutritious, liked both by Europeans and our countrymen but is too rich a food for the ordinary dyspeptic, who should avoid it.

POMEGRANATE. When vital powers are low the Afghan and Peshwar varieties are refreshing and sustaining.

POTATO is palatable, nutritious and antiscorbutic ; but as it contains a large amount of starch, it is bad for acid dyspepsia. Persons with neurotic and liver dyspepsia digest it well. The skin should be separated *after*, not *before* boiling.

PROTEIDS are albuminous substances, the basis of animal and vegetable tissues. As food, they are the most nutritious, and build up and

maintain the integrity of our body. To this class belong milk, eggs, fish, meat, the gluten of wheat, rice, dals and vegetables. Vegetables derive their vitamines and other proteids from the nitrogenous elements of the earth and air, and impart them to animals, who in their turn refine them still further and deliver them to human beings. The passage of food through animal bodies and their final conversion into blood is called metabolism. Proteids are converted in the stomach into peptones before digestion. (p. 29 and 30)

PULSES OR DALs.—These contain a large amount of proteids called 'legumin' or vegetable casein, and are therefore eaten with rice, to make up its gluten deficiency. As all *Dals* are not suited to the dyspeptic, only 3 will be mentioned here (1) *Moong* or *Phaseolus mungo*, is the food in convalescence from acute diseases, as it is easily digested (2) *Urid* or *Phaseolus Roxburghi*, called *Ulanda* or *Udida* in South India, and *Mash Kalai* in Bengal, is a valuable food medicine, used internally in gastritis, gastric ulcer, dysentery, diarrhoea, cystitis, paralysis and rheumatism; and externally in the two last diseases. It contains legumin 22.7 per cent, and is the most demulcent and cooling of all *dals*. Its only drawback is, that it causes wind, to prevent which it should be cooked with cumin and aniseed, and a minute quantity of asafoetida, just enough to give it a flavour.

The bluish coat containing the vitamine should be retained in cooking, and only the clear, mucilaginous decoction given to the patient.

(3) LENTILS (*Lens esculenta*) called *mosoor* in most parts of India) is very easily digestible. *Moong* or lentil when boiled with rice, forms the dish called *Khichri*. "In Europe the meal of lentil mixed with barley flour or other cereal, and common salt, is sold as an invalid food, under the name of Ervalenta or Revalenta." Lentils contain 25·8 per cent of proteids called legumin and 58·4 of starch. "As medicines, lentils have long had the reputation of being useful in constipation and other intestinal affections" (Watt.)

RICE.—is the staple article of food of more than one third of the human race, of whom nearly 200 millions are Indian, Burmese and Ceylonese people. As it has only $7\frac{1}{2}$ per cent of gluten and more than 90 per cent of starch, it is less tasty and less nutritious than wheat, which contains more than 20 per cent of gluten. To make up this deficiency, it is taken with plenty of *aals*, vegetables, fish, and milk. Old rice well boiled is a good food in diarrhœa, and atonic dyspepsia. In the neurotic and irritative forms, *atap* rice is to be preferred. When digestive power is very low, rice gruel, the liquid obtained by straining out of boiled rice, or a thicker homogeneous semi liquid, made by boiling the pounded rice meal, and taken with a pinch of

salt and a squeeze of lemon, is a good drink, in acute and chronic gastritis, and without the lime juice and salt, in gastric ulcer.

Two preparations of rice, one the *Lawa* Sanskrit *Laja*, Bengali *Khoi* from the paddy, the other *Muree* or *phorui*, from the rice treated with a little salt water, are excellent articles of dyspepsia dietary. Both are made by roasting on hot sand, where the paddy or rice swelling out with air to 3 or 4 times its original size, bursts out. The dyspeptic who can not do without some food at night will find one or other of these two, as the only food which agrees with him, unless his disease be intestinal, in which they do not agree. *Muree* is called Indian Biscuit on account of its lightness and crispness.

Rice pudding is a good food in neurotic dyspepsia. Many patients would however digest the pudding better without egg—as *payesh*. Such patients digest *khichri* very well. *Kichri* the favourite invalid food in the upper and many other provinces, is rice and *dal* boiled together. Salt, butter and spices, are added to give it flavour. *Khichri* is a perfect food, as milk is, and if properly cooked, can alone support life in adults for a long time ; as it contains proteids, fats, carbohydrates, vitamine, salt and water. Gruel made of flattened rice (*chura* or *cheera*) is a cooling drink in diarrhoea, dysentery and intestinal dyspepsia.

SAGO,—of all starchy foods is the most commonly used in dyspepsia, diarrhoea, dysentery and fevers. It may be powdered before boiling, to make its gruel homogeneous.

SALT—common salt is an ingredient of our body, and keeps the globulin of the blood in solution. We are continually losing it through sweat, urine, tears, etc. and therefore its want causes disease and even death. It increases the secretion of the gastric juice as we have seen, and should therefore be taken with caution in irritative dyspepsia. Stout persons, sufferers of dropsy, excessive thirst, and skin diseases, should take it with great caution. It is good in atonic dyspepsia.

SATTIE like sago is starchy food good in acute stages of the disease.

SUGAR, (from Sanskrit *Sarkara*), is a powerful antiseptic like Boric acid, and antacid like soda. We therefore mix treacle and sugar with acid food. Taken on empty stomach it increases the flow of gastric juice and is therefore good in atonic dyspepsia, before meals. In irritative Dyspepsia it is good after meals (p. 57.)

TAMARIND.—Green tamarinds are like poison to the dyspeptic. The fresh ripe fruit is good in constipation. The ripe fruit, a year or two old is good in atony of liver, stomach and intestines.

TAMATOES act well on liver, bowels and kidneys and are good in atonic dyspepsia.

TEA. The Chinese say that tea clears away impurities of the body, drives off drowsiness and both prevents and cures head-ache. It produces clearness of mind and activity of thinking which keep the person awake. It is nourishing, and gives power of working when tired.

TEA DYSPEPSIA. If we drank tea like the Chinese, *after finishing* the meal it would not produce much bad effect. But we imitate the faulty system of the English, drinking tea *with* and *between* meals. Here, let us see what two Englishmen of long experience say. "The pernicious system of drinking tea during a meal, is one peculiar to British folks, and the habit is the cause of many dyspeptic troubles**. Tea taken with animal food, be it egg, fish, flesh or fowl, is a CERTAIN MEANS OF PRODUCING DYSPEPSIA. For when the tea is drawn for a long time, and when the tea used is of an inferior quality, the method and the material used in Britain and Australia, the tannic acid of the decoction, uniting with the albumen of the animal tissues, produces a leathery compound, tannate of gelatine, which no gastric juice however potent, can digest"*

Tea drinking prevalent in some parts of Assam for many centuries, did not do any harm. But its introduction throughout the country of late years

*Tropical Hygiene by Lukis and Blackham, Calcutta : Thacker Spink & Co., 1911.

has caused such damage to the digestive power of the people of our upper and middle classes, that tea dyspepsia has become quite an endemic disease in our cities and towns. A young dyspeptic on being asked by the writer if he was a tea drinker, replied "yes sir, I am not only a tea drinker, but a tea-drunkard".

SYMPTOMS. If tea be taken in a concentrated form like soup, containing a large amount of tannin, and made rich with plenty of milk and sugar, in 5 or 6 large cupfuls a day, it produces, after a time, acidity, wind, colic and costiveness. Sleeplessness and loss of appetite follow. At last come dilatation of stomach and palpitation of heart.

TREATMENT. The best treatment is to give up tea drinking. If you can not give it up at once try the best China tea, the least harmful, on account of the smallest quantity of tannin in it. If you cannot get the China tea, and yet can not give up the habit, try the best Assam variety with the following precautions:—Make an infusion, not a broth, or soup. Pour boiling water *on* the tea, not tea *in* the boiling water. Keep the temperature up for 2 minutes, never more than 3 minutes. For the longer the infusion is made, the greater the amount of tannin that comes out and the more certain the dyspepsia or its aggravation. Better still is to drink the

infusion as the Chinese do, by pouring hot water on the tea, and drinking from off the leaves, or like the Russians, drinking it with a squeeze of lemon, without sugar.

Do not drink tea with much milk. The Chinese who taught the world the habit of tea drinking, hate milk. They drink green tea without sugar, and without milk. Do not make it too sweet. Do not aggravate your trouble by drinking too much tea. Do not persist in taking it if it increases your dyspepsia, or if a reduced quantity fails to give you relief. Giving it up entirely leads on to recovery.

TOBACCO. This is not a necessary article of life, nor is it required for brain work. The great thinkers of our country and many of the greatest men in Europe never smoked. "Do not overflow your brain with the fumes of tobacco or alcohol, if you want to be a millionaire" said one who became a millionaire, and never smoked nor drank. It is not required for the maintenance of strength. Our Sikh soldiers so far from smoking, would rather walk an extra mile while on march, than pass right through a tobacco field. And the stalwart upcountry Bramin servant, who can carry three maunds of weight on his head, would rather give up his service, than touch the detested weed for filling up his master's smoking pipe, the *chilim*.

VIRTUES. Yet it must be said that smoked in moderation, tobacco does not do any harm, but produces a slight refreshing effect after mental or bodily labour. It has certainly saved the majority of Asiatics from having recourse to worse intoxicants. By increasing the flow of saliva, it assists as a starch digesting agent, an important point for vegetarian dyspeptics. With many it is an opening medicine. It is supposed to be a preventive of malaria.

TOBACCO DYSPEPSIA. But smoked in excess it produces dyspepsia, tobacco heart, tobacco angina, tobacco amaurosis or blindness, and cancer of the tongue and lips, causing death. The reason why all these terrible diseases are rare in this country is, that the great majority of the people use the *hookah*. The tobacco powder softened with treacle and aromatics, when smoked, emits a smoke, which in its passage through the water of the *hooka*, impregnates that water with nicotine, the poison of tobacco, to such an extent that the water becomes a yellowish solution of nicotine poison, so powerful, that it is used as a domestic remedy for external use in many complaints. The smoke thus freed from a large part of the poison, enters the mouth in a comparatively harmless state. If you are a dyspeptic, either give up smoking, or only smoke it in this scientific way. Do not smoke it more than once or twice a day, and not at all if

it has brought on your dyspepsia. Never eat tobacco in any shape or form, as it is a poison and is a certain cause of the disease.

TURMERIC. *Haridra* or *hildi* is a valuable condiment for curry. Turmeric paper made by dipping blotting paper in a solution of this substance and dried, is a good test paper for the detection of alkaline urine, which turns it red. Turmeric lotion has a soothing effect on the mucous membrane of the eye in ophthalmia and added to curries, on stomach in gastritis. A paste made of turmeric and cream is a soothing application in dyspeptic skin disease.

Turnip (*Salgom*) if well boiled, becomes very soft and easily digestible for all chronic dyspeptics, except such as suffer much from wind and intestinal trouble.

VENISON. In this country the buck venison is preferred to the doe. It is easily digestible, if not cooked rich.

WATER MELON. (*tarmooj*) the water is demulcent and prevents vomiting in gastritis and gastric ulcer if given with ice.

ZINZIBER. Ginger is a valuable carminative both as food and medicine. "Ginger at the beginning and lemon at the end of breakfast and dinner" is a good prescription in atonic dyspepsia.

CONCLUSION.

You have seen dear reader, in the foregoing pages that acute dyspepsia is curable by doctors, the chronic by the patient himself. Commencing from the 4th chapter, the treatment consists of self regulation, self-restraint, and self denial. It is a self-government, in which the higher self governs the lower, and compels it to drive the disease out of the body.

Remember, this human body is not our own property. It is a sacred temple, in which man is allowed to live for a short term on condition of keeping it clean. If he pollutes it with objectionable habits and pursuits, he is punished with disease, and if he still persists in his folly, is ordered to leave it before completing his term.

Be methodical and punctual in carrying out the instructions given. Method is orderly arrangement of things and works, and punctuality its twin brother, is exactness in time. A methodical man can put his hand exactly on the smallest thing he wishes to get in a dark room, and a punctual man is like a moving clock, so that you can tell the time of the day by looking at his actions. If you frame out a method of serving your body, and be punctual in ministering to its daily wants, recovery follows as certainly as day follows night.

Fast is out and out the best physician in most stages of the disease if judiciously resorted to. A fast at intervals and in length of time suited to your power of endurance is often successful in effecting a cure. On the contrary, indiscreet eating and drinking are like two thieves that come to the patient in the garb of friends to steal his health. Beware of them, Eat to live, do not live to eat.

By carefully following the instructions, a temporary cure may be expected in 6 months to a year. By remaining cautious and abstemious for some years the disease may be exterminated.

Though you treat yourself, do not forget the doctor. To the self-treating dyspeptic, a physician is like a lifeboat in a sailing ship, not used in smooth sailing but only in a shipwreck. Make the doctor your friend. He will give you appropriate drugs or direction in emergency, prevent unnecessary medication, and save you from committing the mistake of running from one doctor to another, which so often proves disastrous to the Indian patient.

Above all, do not forget your Creator. Even if out of your 24 hours, you give to worldly pursuits 23 hours and 55 minutes, and spend only 5 minutes in *earnest* prayer for recovery, it will produce a desirable effect on your health and peace of mind.

The End.

INDEX.

	Page		Page
Acids, after food	61	Constipation	156
„ of fruits	122	Cooking for the dyspeptic	197
„ Digestion of, a		Dancing girl, imitating the	135
good sign	187	Deep breath exercise	137
Acidity, Symptoms of,	48	Dentist versus Physician	19
„ Treatment of	49	Diabetes an allied disease	176
„ A cause of		Diarrhæa	72
headache	180	Dilatation of stomach	63
Albuminuria	176	Dinner	102
Alcohol, as medicine	187	Dishes number of	99
„ not a food	190	Drinking water	96, 97, 141
Alcoholic dyspepsia	188	Drinks other than water	97
Alkalies	191	Dumb-bells	134, 35
Anæmia	166	Dysentery	72
Appendicitis	70	Dyspepsia	
Auto-suggestion	114	Accute Irritative 39; Alcoholic	
Baths	85, 139	188; Atonic 57; Brain 73; Chron-	
Bed	105	nic 79; Irritative 47; Duodenal	
„ Early to	80	65; Intestinal 67; Liver 171;	
Bitters	60	Nervous 73; Tea 212; Terti-	
Black Salt	59	ary 166; Tobacco 215; Un-	
Brain, troubles of	179	clean conscience of, 74.	
Bread and buns	193	Eating attention to	95
Breakfast	87	„ In excess	14
„ Early	84	„ In hurry	14
„ How to eat	90	„ Intervals of,	15, 56
„ In haste	87	Electric Cure	120
Carpentry, as exercise	136	Exercise Cure	130
Chyle	32	Faith Cure	114
Chyme	29	Fast Cure	106
Cleansing Internal	82	Feasts, avoid	103
Climate a cause	10	Fomentation	45
Climatic Cure	150	Foul gas	42
Colic duodenal	66	Foot bath	143
„ Gastric	43, 54, 167	Fruit cure	122
„ Gallstone of,	173	Gall bladder	35
„ Intestinal	68-72	„ stone	17
Cocoanut Cure	123	Gardening as exercise	135
Compress cold and hot	141	Gastric juice	26
„ Dry	45	Gastralgia	43

	Page		Page
Gastric ulcer	167	Physician, Time-piece as a	95
Giddiness	181	Pulv Asafetidæ co	62
Globus Hystericus	174	Physician a life boat	218
Graduated fast	174	Pulses or dals	208
Hæmatemesis	168	Quantity of food	98
Headache	180	Quaint dreams	179
Heat cure	44	Raw meat juice	198
Heart burn	48-49	Revalenta	209
„ complaints	174	Rice—	209
Hiccough	169	Roasting	198
Hot bottles	45	Roasted rice	210
Hypnotic suggestion	116	Rumination	78
Incompatible food	103	Salt as food	211
Inspiration cure	116	„ free diet	55
Irritable temper	184	Sandow's dumb-bells	134
Jaundice	172	Sea Voyage	154
Jug-soup	198	Siesta, afternoon	101
Kidney and bladder		Sitting exercise	136
diseases of	176	Skin diseases	178
Lime water	42	Sleep	104
Luncheon	101	Sugar	211
Lunch	100	Supper	102
Lungs affection of	175	Tea dyspepsia	212
Massage cure	118	Teeth diseases of	19
Melancholy thoughts	185	Throat Belching	59
Milk cure	143	Tongue appearances of,	22-23
Mountain climate	152	Variety not satiety	89
Motor driving	133	„ a religious injunction	Do.
Muscle contraction	134	Vertigo	181
Neurotic dyspepsia	73	Voracious appetite	76
Nightmare	179	Walking exercise	132
Noises in the ear	185	„ stick „	133
Occupation as a cause	13	Water cure or hydropathy	139
„ For the rich	100	„ The best remedy	41
Oil rubbing	119	„ Drinking a cause	17, 96
One meal a day	108	„ Filtering	142
Panada	145	„ Purity of	141
Pan cure	125	Whey	147
Papain the best digestive	205	Why rice eaters are	
Perverted taste	17, 21	dyspeptic	93
Physician if case serious	41	Wind	53
„ Unable to cure	1		

